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DECEMBER 1987 VOLUME 6, NUMBER 8
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Mark Williams C	46.0
Megamax	78.5

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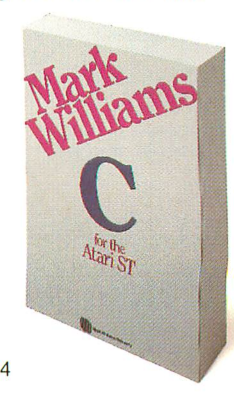
*Sieve benchmark from Byte, 1983, done on one double-sided floppy disk and included RAM disk.

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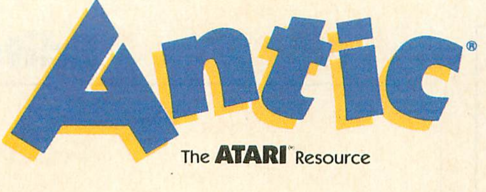
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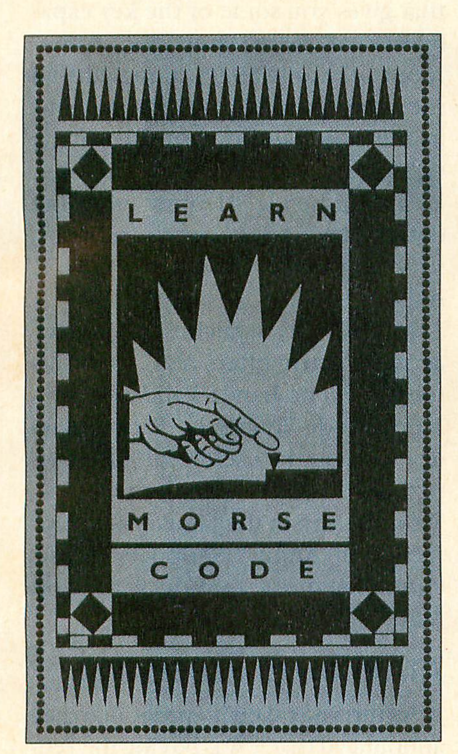
DECEMBER 1987, VOLUME 6, NUMBER 8

FEATURES

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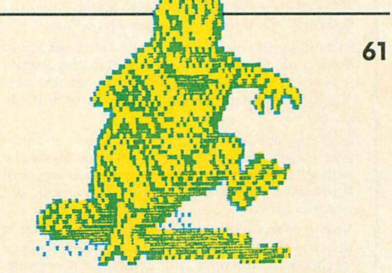
HOLIDAY PRINTS/37

DEPARTMENTS



ST RESOURCE/53

SOFTWARE LIBRARY



MORE ICONS FOR PRINT SHOP/42

ST RESOURCE



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Subscription Customer Service
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***Antic**, P.O. Box 1919, Marion, OH 43306*

December 1987, Volume 6, Number 8

Antic—The Atari Resource is published monthly by Antic Publishing. Editorial offices are located at 544 Second Street, San Francisco, CA 94107. ISSN 0745-2527. Second Class Postage paid at San Francisco, California and additional mailing offices. POSTMASTER: Send address change to **Antic**, The Atari Resource, P.O. Box 1919, Marion, OH 43306.

Subscriptions: One year (12 issues) $28. Canada and Mexico add $8, other foreign add $12. Disk Edition (12 issues with disks) $79.95, all foreign add $25. (California residents add 6½% sales tax for disk subscriptions.

Editorial submissions should include text and program listings on disk and paper. Submissions will be returned if stamped, self-addressed mailer is supplied. **Antic** assumes no responsibility for unsolicited editorial material.

Editorial



We had a two-inch-high pile of reader letters within just a few weeks after **Antic's** June, 1987 editorial calling for write-ins to make Springboard release an 8-bit Atari version of their successful **Newsroom** page designer software.

At the June Consumer Electronics Show in Chicago, Springboard president John Paulson and I recognized each other's nametags and he said, "Okay, I give up, Springboard will convert Newsroom for the Atari 8-bit."

So just as you did during the 1985 "We Want Software" write-in campaign, **Antic** readers have again made a difference in the Atari marketplace. At deadline, Springboard told **Antic** that the Atari Newsroom would be ready by October, 1987.

Antic welcomes Springboard Software to the Atari market and we hope that their Newsroom conversion earns a hearty reception from 8-bit buyers. However, no computer market stands still. The ultimate success of Newsroom with Atarians will depend on how effectively Springboard delivers "power without the price" in terms of harnessing the Atari's graphic strengths.

In fact, this sixth annual holiday issue of **Antic** impressively demonstrates the resourcefulness, imagination and tenacity of committed Atari users when they seek to fill gaps in available software for their computers.

At this time of year, Atarians want to use their computers for printing festive pages that combine words and pictures. And in these pages you'll find a major teaching article, reviews and several type-in programs that make it possible for you to use Broderbund's popular **Print Shop** in powerful new ways never conceived by the program's publishers.

This holiday printing issue of **Antic** also features a review of Reeve's **News Station** and the brand-new **News Station Companion**—two products that combine into a mighty rival for Newsroom. And don't miss the review of Hi Tech's **AwardWare**, a strong competitor of Springboard's **Certificate Maker** that sells for only $14.95.

In addition, this issue's Super Disk-Only Bonus, Antic Publisher, is a starter desktop publishing program that gives you some of the key capabilities of Print Shop and Newsroom—for only $5.95, along with all the other print-enhancing programs in the issue. And one of the sample typefaces given with Antic Publisher is an authentic Hebrew alphabet designed by the program's Israeli author. How's that for the ecumenical holiday spirit?

All this only scratches the surface of what **Antic** offers Atari users this month. For both the ST and the 8-bits, Morse Code Trainer by Patrick Bass teaches you the useful skill of recognizing dot-dash communications. We'll see you in the January issue for the Sixth Annual Shoppers Guide, compiling the best products for 8-bit Atari.

ATARI BUYS FEDERATED

As this issue went to press, Atari just announced that it was buying the Federated electronics chain for $67 million. Federated is an aggressive high-volume retailer with 65 stores in California, Arizona, Texas and Kansas.

Is Atari taking the first step towards controlling its own retail outlets the way Tandy does with Radio Shack? Could be. But right now the ever-unpredictable Jack Tramiel says he is more actively seeking to buy Atari its own microchip factory.

Nat Friedland
Nat Friedland
Editor, **Antic**

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CLASSIFIED KUDO

I'm just a smalltime operator working out of my house. Since I first placed my **Antic** Classified Ad in March, 1987 I have had almost 100 requests for information concerning the product I sell. Only three of these responses came from my home state. So without **Antic** Classifieds I would have quite a small mailing list. The chance to reach more than 100,000 people at such an affordable cost is a blessing for me.

Rodney Haun
Computers As Tutor
Mt. Zion, IL

FOOTBALL PREDICTOR

Football Predictor author Bill Marquardt (October, 1987) says he forgot to mention that if the program crashes due to improper keystrokes, you can often recover your latest data by simply typing GOTO 1200.

INPUT TROUBLE

After writing to a file using "PRINT #X, A$", I use "INPUT #X, A$" to get the data back. What I *have* been getting, however, is A$ with the data beginning at A$(11)—the first 10 bytes of A$ are blank. This is particularly annoying if A$ is DIMensioned to a figure too small to retrieve all of the data. None of my reference books seem to have a solution for this problem.

Steven Shafer
Edwards AFB, CA

A comma in a PRINT statement means "Skip 10 spaces, then print." You should use a semicolon: "PRINT #X;A$".
— ANTIC ED

V-GRAPH/SYNCALC

V-Graph (**Antic**, *November 1986*) does work with Broderbund's SynCalc spreadsheet. It's not a reprogramming patch—just change a few global values within SynCalc. Change cell width to 11 by typing /FGW11 or by going to the proper menu. Right-justify with /FGR and disable the headings with /H. Also, save each column as text (/LST, range and filename) and don't forget to use the .TXT extender when

continued on next page

Super Disk Bonus

Antic Publisher

Get started in desktop publishing

This month's Super Disk Bonus will get you started creating personalized newsletters, ads, flyers, greeting cards. Antic Publisher does it all nearly effortlessly with pull-down menus and a joystick.

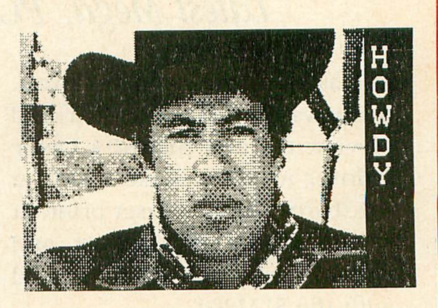
Antic Publisher is an easy page designer with built-in character font editor. You can create a multitude of typeface styles in a wide range of sizes. Or just use the sample typefonts provided on this month's $5.95 Antic Disk.

You can add graphics from the most widely used Atari picture formats, Micro Illustrator and Micro-Painter. Then print out pages of mixed text and graphics just the way you see it displayed on your screen.

Antic Publisher was written by Nadav Gur, who also created the epic-sized Dungeon Arcade game in this issue. The author is from Israel, so one of his typefonts on this month's disk is really unique—a Hebrew alphabet that prints in the authentic way, from *right to left*.

The Antic Publisher program and instruction manual are both on this month's Antic Disk. Choose selection 5 on the Main Menu of Side B.

Your December, 1987 Antic Disk—featuring Antic Publisher and a host of other useful printing programs—will be shipped to you within 24 hours after receiving your order. Just phone Toll-Free to the Antic Disk Desk at (800) 234-7001—only $5.95 (plus $2 for shipping and handling) on your Visa or MasterCard. Or mail a $5.95 check (plus



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loading it into V-Graph. Just remember that text files can't be loaded back into SynCalc, so it's a good idea to make backups of information you might need to change.

Jeremy Price
Hillsdale, NY

Help!

ANTIC SPELLING CHECKER

Antic Spelling Checker (Super Disk Bonus, October 1987) locks up occasionally. But the problem is *not* with the Spelling Checker itself. The trouble lies in the 5-sector add-on file, DICTION.1, a starter dictionary with 116 commonly used words. You don't need this dictionary to use the Checker.

A properly working DICTION.1 will be found on the December 1987 Antic Disk. Or you can download it from SIG*Atari on CompuServe, in the 8-bit General Data Library.

VIP PROFESSIONAL

An incorrect phone number was given for VIP Technologies in a review of VIP Professional spreadsheet in the Fall 1987 START. All questions about VIP Professional should be directed to ISD Marketing, Inc., P.O. Box 3070, Markham Industrial Park, Markham, Ontario, Canada L3R 6G4. (416) 479-1880. ■

***Antic** welcomes your feedback, but we regret that the large volume of mail makes it impossible for the Editors to reply to everyone. Although we do respond to as much reader correspondence as time permits, our highest priority must be to publish I/O answers to questions that are meaningful to a substantial number of readers.*

Send letters to: Antic I/O Board, 544 Second Street, San Francisco, CA 94107.

NEWS UPDATE

Antic Tests Newest Atari Hardware

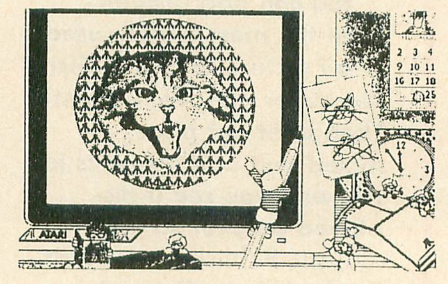
Latest Mega, PC, Laser timetable *by* Nat Friedland, ***Antic** Editor*

Just as this issue went to press, **Antic** was invited to visit Atari and preview the new **SLM804 Laser Printer** in action. Take a look at the sharply detailed laser printout accompanying this article and you'll see why we were impressed with the SLM804.

While we were in the Atari Engineering Department observing their laser printer crank out ultra-sharp pages, on a workbench behind us was a line-up of seven **Atari PC** clones. These IBM-compatible Ataris were running a wide range of MS-DOS software, from Lotus 1-2-3 to Flight Simulator II.

According to Atari Marketing Communications Director Neil Harris, those PCs were a pre-production test shipment. In a manufacturing start-up timetable, this would put the PCs about 30-45 days behind the 2-megabyte **Mega 2** and 4Mb **Mega 4** three-piece STs.

The first production run of



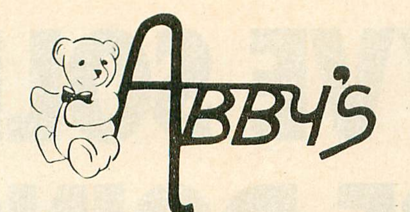
Megas was shipped to software developers and is now going on sale in Germany and France. Harris said that a major "rollout" of the Megas and laser printer would take place in October, with a series of regional dealer meetings. At that time, final prices for these products were to be set.

Antic has just received a developer's 4-megabyte Mega 4 (with blitter chip), which will be covered in detail in coming issues of **Antic** and in the Spring 1988 issue of STart, The ST Quarterly.

We opened up our Mega's motherboard box and looked at the clean chip layout. Especially impressive was the wide-open Direct Memory Access which should make it easy to tap the power of the Mega for a variety of specialized hardware uses.

Of course, while at the Atari Corp. we also took advantage of the opportunity to check on the latest status of previously announced hardware for the 8-bit computers. According to Harris, the first cargo containers of the 80-column **XEP-80** display box (**Antic**, July 1987) and **SX212** 1200-baud modems had just arrived in Atari U.S. warehouses. We also heard that the **XE Game System** computers and many new XL/XE-compatible game cartridges were due to start reaching the stores in October.

However, the double-sided, double-density **XF551 Disk Drive** shown at the June Consumer Electronics Show (**Antic**, September 1987) will not be scheduled for manufacture until programming of the new operating system is successfully completed. ■



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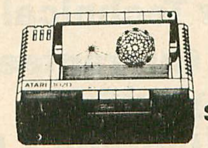
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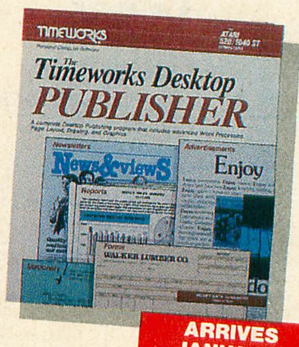
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Game of the Month

by NADAV GUR

Dungeon Arcade

40 crypts full of monsters & magic

Antic's first program from Israel, Dungeon Arcade is an epic-scale fantasy role-playing adventure. Not only that, it also offers elements of arcade action when you fight the monsters in the 40-room dungeon. This BASIC program works on Atari 8-bit computers with at least 32K disk or 24K cassette.

So you want fame and fortune, huh? Well, fame and fortune will cost you, and right here is where you start paying—it might just be with your life!

You're an adventurer who descends into a 40-room dungeon and you have to come out. . .somehow. In your explorations, you'll encounter obstacles—from hideous monsters to deadly traps. And if you're good enough, you may emerge both famous and fortunate—not to mention alive.

Each of the 40 rooms in the dungeon comes with traps, walls, treasures and a monster. In order to get past the door, you will have to fight your way past the monster, or somehow escape its clutches..

The top two lines of the screen display status information about you and the monster:

HP—Hit Points are the measure of your health. They decrease when you're hit by something—be it a monster, trap or wall—and when they fall to zero, you're dead.

CS—Creature Strength is the monster's hit points.

HS—Hit Strength is the damage you inflict on your opponent.

XP—eXperience Points (XP) are awarded when you kill a monster and are the measure of your fame.

Inventory consists of the items you find along the way.

STICK OR KEY

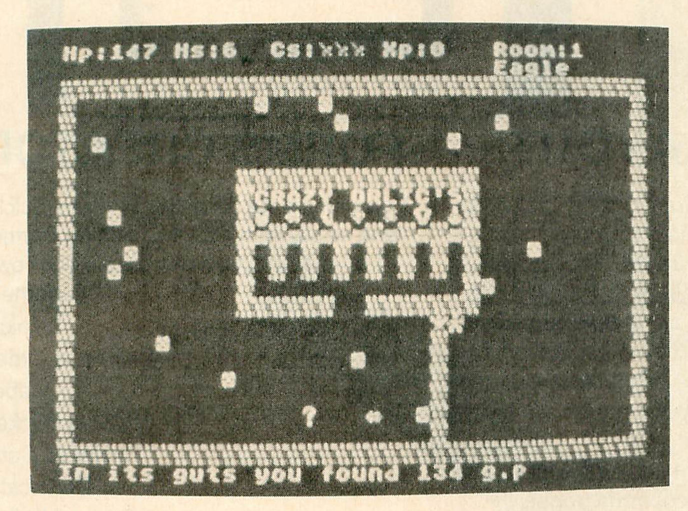
You can play Dungeon Arcade with the joystick or the keyboard. The basic movement commands are:

Joystick	Keyboard
Up	[U]
Down	[M]
Left	[H]
Right	[K]

To exit a room, move to a doorway. If you walk into a wall or step on a trap, you'll get hurt. But if you bump into a monster, something strange might happen.

To fight a monster with your sword, press the joystick button or the [J] key. You must be to the left or right of a monster in order to hit it.

When you strike, your hit strength will be displayed under HS. An estimate of the blow's severity will also be displayed at the bottom of the screen. This bottom area often displays messages. It's up to you to figure out which ones are important and which are just red herrings.



To pick up an object you find, just move over it. But aside from arrows, which are always found along with bows, you can't have more than one item of each kind. Items such as potions and food are consumed immediately and do not go into your inventory. Some inventory items like shields or suits of armor are used automatically. However, weapons are generally used only at your command.

YOUR WEAPONS

Magic Scrolls—These useful scrolls contain a Freeze Spell. To wield this spell, press [N]. A jet of ice emerges from your adventurer's hands and hits the monster—if it is within range. The monster's current strength determines how long it will be paralyzed. The jet itself destroys everything in its path, which can also be useful.

Fireball—When you acquire a Fireball Spell, FB appears at the top right corner of the screen. Pressing [,] shoots it in the direction last traveled in. The fireball explodes either when it hits something or when it reaches the end of its range. Anything in the area of explosion will be damaged—including you.

Bow and Arrows—These are a package, appearing on-screen as just a bow. Your inventory shows them as BOW,

continued on page 18

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CIRCLE 065 ON READER SERVICE CARD

by JIM JOHNSON

Iconverter

Display Print Shop icons online

Iconverter converts any Print Shop icon directly to ATASCII graphics characters. This opens up a whole new treasure trove of online art for Atari bulletin boards. The BASIC program works on 8-bit Atari computers with at least 48K memory and disk drive.

Now you can translate your Print Shop images into Graphics 0 screens—standard ATASCII character graphics. This opens up a whole new source of flashy display screens for Atari bulletin board system operators who are always hungry for good visuals.

Iconverter translates any image from Broderbund Software's Print Shop directly to ATASCII graphics characters. Then it's a snap to load the ATASCII file into any word processor for editing and save the finished file to disk.

NOTE: Iconverter images are for printing to your screen, *not* your printer. In a way, this program accomplishes the reverse of *ASCII Art Converter* (**Antic**, July 1987) which translates online "character art" into the standard Atari graphics formats for high-resolution printouts and screen displays.

You can use the vast library of icons and other visuals available on Print Shop data disks—both the official Broderbund products and public domain images. Or you can create your own pictures with the Print Shop Editor module.

Iconverter can also handle high-resolution screens produced with graphics editors such as Micro-Painter, Micro Illustrator and RAMbrandt—even ComputerEyes digitized pictures. These just need to be processed by conversion programs such as Graphic Shop (The Catalog, $19.95, AP0156), or XLEnt Software's Print Shop Interface which translates the company's Typesetter images to Print Shop Format.

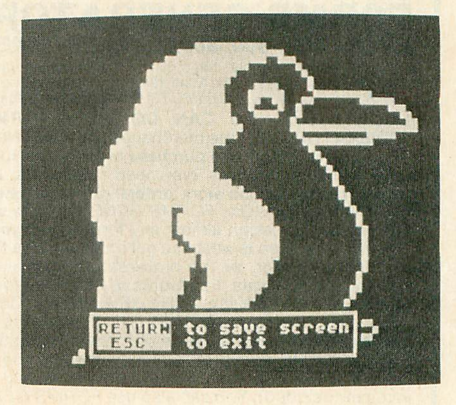
If you've ever tried to create anything recognizable with the 8-bit Atari special graphics character set in ROM, you know how tedious and frustrating that can be. While there are plenty of graphics editors which enable you to create spectacular graphics in bit-mapped modes, there has been little help with text modes—until Iconverter.



CENTER THE PIX

When converting a Print Shop icon, Iconverter clips four pixels from each side of the image—because the resolution of a Print Shop icon is 88 pixels across. Given that a Print Shop Graphics 0 block is two pixels wide by two pixels tall, we can convert 80 Print Shop columns to fit on a 40-column Graphics 0 screen. So when drawing with the Print Shop Editor module, just center your image and avoid the edges.

Also, 38-column word processors clip the right edge even more. However, the full height of your image will be converted, even though only 24 rows fit on a Graphics 0 screen. You can view those unseen lines by using the up and down [ARROW] keys while in the Graphics 0 preview mode.



You can also compress a Typesetter icon or hi-res screen into a Print Shop icon. There will be a loss of resolution, of course, but the image will still be recognizable. High-contrast pictures work best.

Another idea is to use the text option in the Print Shop Editor module to create oversized text and titles by typing onto an icon. These look great in a bulletin board scroll or inserted into your own program. Typing on an icon using an 8×8 character set will yield a usable 40-column line of 10 oversized characters—nine characters if your word processor shows fewer than 40 columns.

USING ICONVERTER

Type in Listing 1, ICONVERT.BAS, check it with TYPO II and SAVE a copy before you RUN it.

If you have trouble typing the special characters in lines 1950-1970 and 2030, don't type them in. Listing 2 will create these lines for you. Type in Listing 2, check it with

continued on next page

ICONVERTER
continued from previous page

TYPO II and SAVE a copy. When you RUN Listing 2, it creates those hard-to-type lines and stores them in a disk file called LINES.LST.

To merge the two programs on disk, LOAD "D:ICONVERT.BAS" and then ENTER "D:LINES.LST". Remember to SAVE the completed program before you RUN it.

At the prompt, enter the filename of the icon you want to load, and Iconverter will display the image and clip the edges. To shift the icon, you must go back to your Print Shop Editor.

Press [RETURN] to start converting. You can watch the progress line to the left as it works its way down the icon. This takes about 70 seconds.

When the conversion is done, Iconverter displays the new image in Graphics 0. You can toggle the prompt window on and off by pressing the [SPACEBAR]. To save the image as an ATASCII file on drive 1, press [RETURN]. You will be prompted for a new filename.

Now you can load the character art file into your word processor to touch it up or add text. ■

Jim Johnson is employed by Dupont in Seaford, Delaware and is secretary-treasurer of GAUGES (Greatest Atari Users Group on the Eastern Seaboard).

Listing on page 65

DUNGEON ARCADE
continued from page 15

followed by the number of arrows left. Press the [I] key to shoot an arrow in the direction you last traveled.

When you kill a monster in face-to-face combat, you get some gold pieces—one of the measures of fortune in this adventure. You can also use gold pieces to buy things at various shops in the dungeon that will sell you whatever you need—at *their* price.

To buy something, move to the appropriate counter. The item will appear behind you and the price will be deducted from your gold pieces. If you don't have the money, you might be able to *steal* the item—if you're cleverer than the shopkeeper.

GETTING STARTED

To play Dungeon Arcade, type in Listing 1, DUNGEON.BAS. Check it with TYPO II and SAVE a copy before you RUN it. Be especially careful when you type the data in lines 2500-2750, because these are enciphered text lines to be displayed at the bottom of the screen—coded so as not to spoil the surprise.

If you have trouble typing the special characters in lines 30020-30040, don't type them in. Listing 2 will create them for you. Type in Listing 2, check it with TYPO II and SAVE a copy. When you RUN Listing 2, it creates these hard-to-type lines and stores them in a file called LINES.LST.

To merge the two programs, disk users LOAD "D:DUNGEON.BAS" and then ENTER "D:LINES.LST." Cassette users: CLOAD Listing 1, then insert the cassette used for Listing 2 and ENTER "C:".

Remember to SAVE the completed program before you RUN it.

When you RUN Dungeon Arcade, the title screen appears and you will be prompted to type your adventurer's name and press [RETURN]. The computer will greet you, pause for a bit, and then begin the game.

Dungeon Arcade uses Graphics Mode 0 with a custom character set. The animation is all done by simple character movement. There is a lot of text manipulation. Boolean algebra is used to optimize the program's speed and size.

Some PRINT statements may be unclear. These are mostly statements which restore information to the screen.■

Israeli high school student Nadav Gur has been programming on his Atari for three years. His professional-quality page design program, Antic Publisher *is this issue's Super Disk Bonus.*

Listing on page 71

Morse Code Trainer —for 8-bit and ST

In this issue

New Products

By Gregg Pearlman, Antic Assistant Editor

*New Products notices are compiled by the **Antic** staff from information provided by the products' manufacturers. Antic welcomes such submissions, but assumes no responsibility for the accuracy of these notices or the performance of the products listed.*

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Renton, WA 98058
(206) 277-1768
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Classy Chassy pinball ($9.95) lets you add "english" to the play. But if you lean too much, you'll TILT the machine. And the better you do, the better the view of your cheering section. **Time Bomb** ($9.95) puts you in control of the ultimate bomb disarming robot, which you must guide through a building diabolically booby-trapped by the Mad Bomber. ■

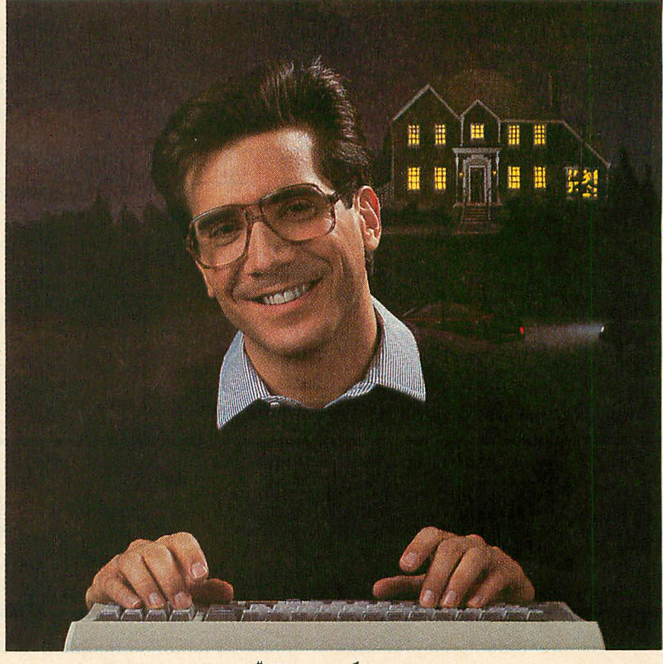
Return the favor. When you call a manufacturer or supplier about a product you've seen advertised or otherwise mentioned in ANTIC, please tell them so. This will help us to continue to bring you the latest information about products that will make your Atari computer an even more valuable investment in the future.
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Reviewed by Gregg Pearlman

The January, 1987 issue of **Antic**, had high praise for the **First XLEnt Word Processor**. Now some key items on reviewer Charles Cherry's wish list have been added to Version 2.1 of this outstanding word processor. (Current First XLEnt users can upgrade for $3 and their original program disk—or keep the disk and send $5 plus your registration number.)

Our favorite new feature in Version 2.1 is the way it searches and replaces carriage returns. (**Antic** often receives downloaded or transferred documents with carriage returns all over the place.)

Now when you leave the icon menu, you are returned to where you left the text, and there is no unrequested switch between insert and strikeover mode.

Now [CONTROL] commands for the 800 version are [OPTION] commands, the same as on the XL/XE version.Now you can save settings such as cursor speed and shape, typing mode, margins and word-wrap.

Versions 1 and 2 used inverse spaces to show screen spaces which, because of word-wrap and carriage returns, don't actually end up in your document. The program now uses underline symbols (____).

[CONTROL] [SHIFT] [P], instead of being the partial-delete command, now lets you enter the printer formatter directly—it's tantamount to pressing [ESCAPE] from a text window and then moving the cursor to the fancy P icon. [CONTROL] [SHIFT] [D] is the new partial-delete function, but it still doesn't highlight the text to be deleted.

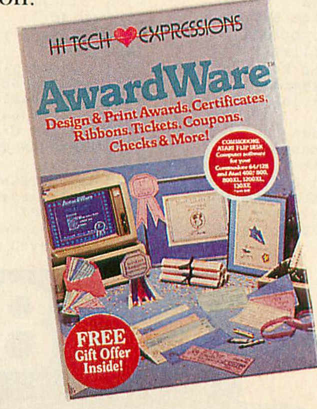
First XLEnt Word Processor came highly recommended in its original version, and Version 2.1 merits an even longer look.

AWARDWARE

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CIRCLE 212 ON READER SERVICE CARD

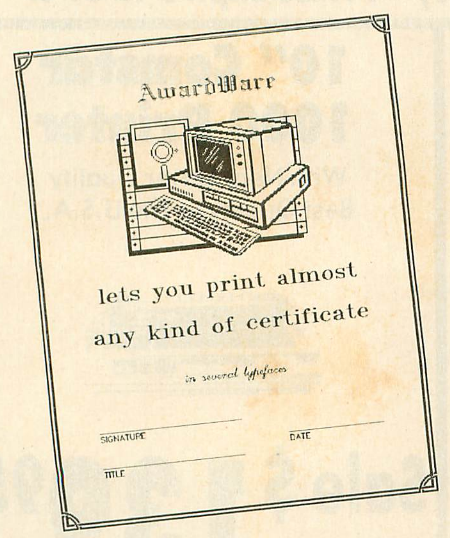
Reviewed by Gregg Pearlman

Like Springboard's popular Certificate Maker, Hi Tech's **AwardWare** is a specialized type of Print Shop package that makes it easy for you to design and print flashy awards, diplomas, licenses and certificates of recognition.



AwardWare offers a library of over 100 awards templates—horizontal, vertical, 5×7 and 8×10. You can print humorous oversized "checks" or four admission tickets per page. There's a choice of four ribbon styles, as well as mock plaques, trophies and "keys to the city."

Most of the 32-page manual is filled with AwardWare's 60 templates for



awards and licenses, 25 for letterheads and memos, four for ribbons and 10 for miscellaneous awards—99 templates in all, if you don't count the nine types of "QuickAwards." In addition, the program has 20 borders, five fonts, 20 graphics, five seals and four signature types.

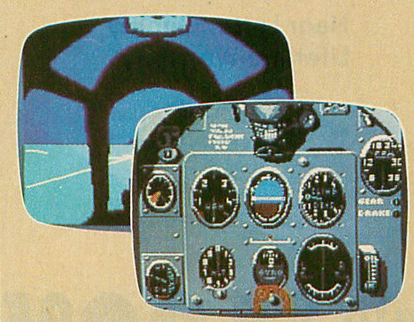
These templates are all fairly similar overall—a graphic, a border, some large text here, some small text there. . . .

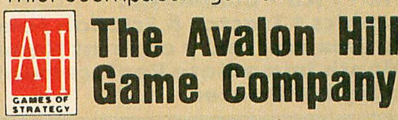
AwardWare is no speed demon. Even the credits screen takes a full minute for a complete cycle. Expect to wait between four and 15 minutes per printout. The program doesn't seem to print more than 12 lines before stopping and retrieving information from one of the two AwardWare disks. The screen fills with weird garbage while the award is printed, so at least you know something's happening while your printer is inactive.

It's difficult to fit all your text on an award. Templates have different space allotments for text, and the font sizes you choose will affect the number of characters that can be used. Trial and error is about the best way to figure it out. And occasionally the program prints a row of zeroes instead of several-dots-per-inch graphics.

But if you use your imagination and have reasonable patience, AwardWare will prove to be versatile and lots of fun. ■





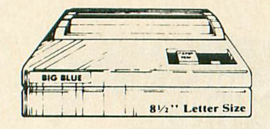


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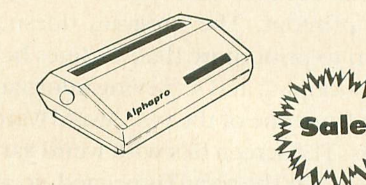
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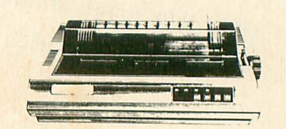
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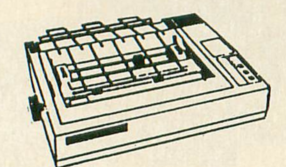
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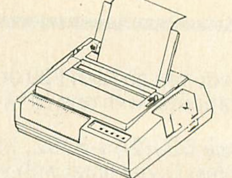
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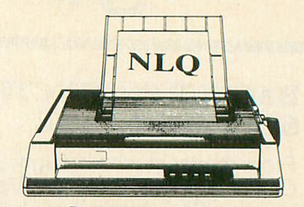
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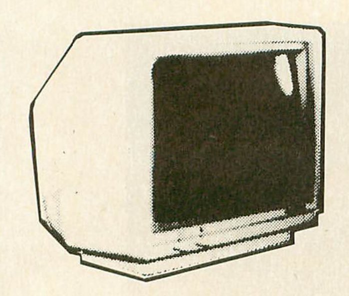
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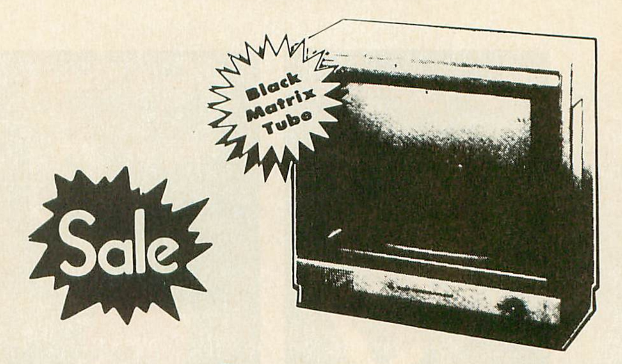


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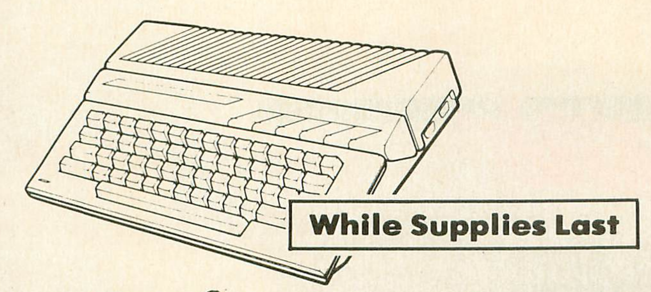


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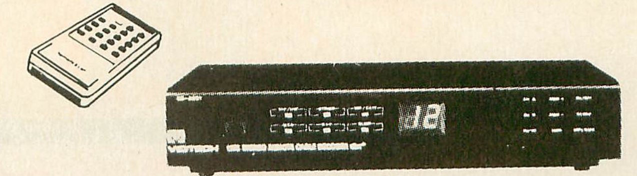


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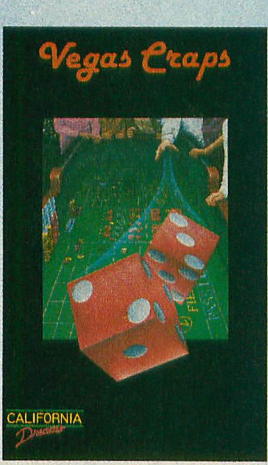
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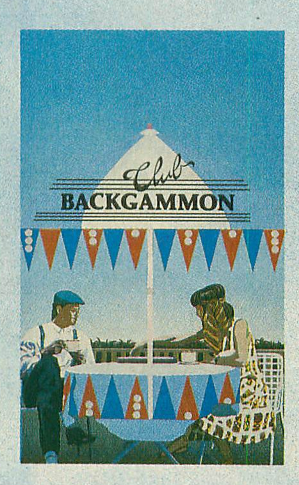
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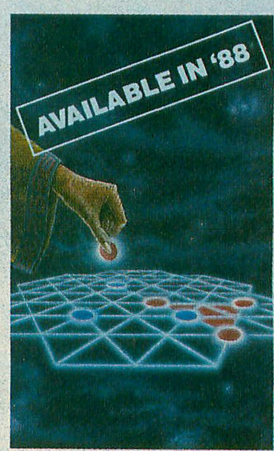
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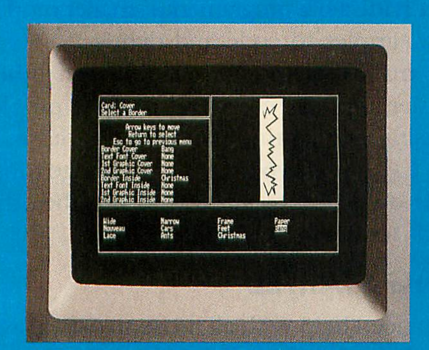
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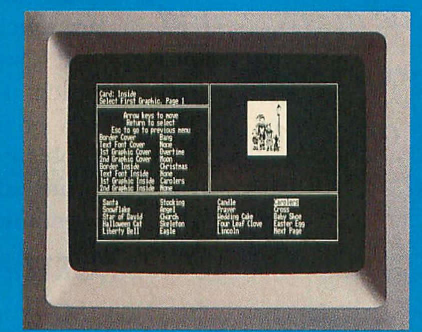
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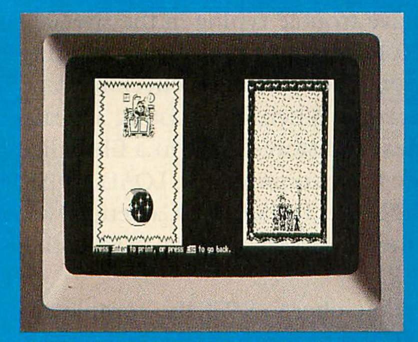
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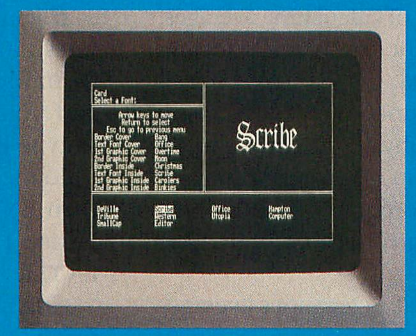
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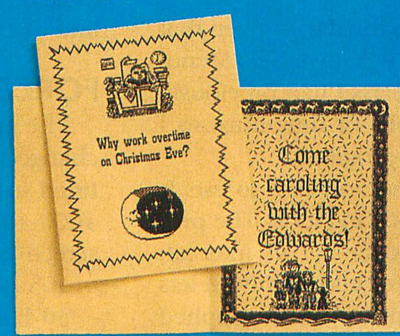
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CIRCLE **034** ON READER SERVICE CARD

by ROBERT WITZOFSKY

Science Statistician

Data in, analysis out

Science Statistician is just what you need for all those laboratory experiments where you have to calculate averages and standard deviations for your results. This BASIC program works on 8-bit Atari computers with at least 32K memory, disk or cassette.

As you start taking science classes in high school—and continuing throughout your university career—you quickly find that much of your laboratory responsibilities consist of calculating averages, standard deviations and other statistical information about your experimental data.

This means a lot of number crunching, whether you are studying chemistry, biology, physics, engineering or any other science—not to mention all that graphing of unusual-looking functions for your required math classes. And what's better for brute-strength number crunching than your trusty Atari computer?

I decided to write a program that determines averages and standard deviations from given data sets after discovering that my college chemistry class mainly tested number-crunching skills.

I added the ability to fit a curve to the data—given that you take the logarithms of X and/or Y (Analysis Menu, choice 4). For a computer science class I had previously written a program that draws graphs of functions, so I decided to add this feature to my program.

Science Statistician is menu-driven and easy to use. It does a variety of tedious and painstaking jobs. The program can graph any legal function over a given interval, or perform a numerical integration for given limits. It lets you type in data or data points which can then be graphed or analyzed, with the analysis consisting of standard and average deviations as well as curve-fitting.

Graphs and data can then be printed for later analysis. Note that the trigonometric functions use radians, not degrees.

After using Pascal and C++, I realized how much I missed having the functions and procedures each of these languages offers. So instead I used subroutines allowing my pseudo-BASIC functions and procedures to be called by any part of the program. Though they're not as simple or quick as those in a structured language, these subroutines can divide a big program into smaller modules which are much simpler to code and debug.

It also makes using subroutines from other sources much easier, because computer science problems often rely on using or adapting standard algorithms to solve a problem. I also use two machine language routines. One prints text on a Graphics 8 screen and the other dumps a graphics screen to the printer.

GETTING STARTED

Do you need help with all those statistical assignments this term? Here it is—Science Statistician. Type in Listing 1, SCIHELP.BAS, check it with TYPO II and SAVE a copy before you RUN it.

If you have trouble typing in the special characters in lines 14000-15140, don't type them in. Listing 2 will create them for you. Type Listing 2, checking it with TYPO II, and SAVE a copy. When RUN, Listing 2 creates these hard-to-type lines, and stores them in a file called LINES.LST.

To merge the two programs, LOAD "D:SCIHELP.BAS" then ENTER "D:LINES.LST". Cassette Owners: CLOAD Listing 1, then insert the cassette used with Listing 2 and ENTER "C".

Finally, remember to SAVE the completed program before you RUN it.

Science Statistician is a self-modifying program which must be typed-in *very carefully*. Be sure to type in *every* line of the program and do *not* renumber it.

FORCED READ

The program uses your Atari's "forced read" mode to change the function to be plotted. This function is defined in line 30. The forced read mode, found in lines 4000-4080, lets your Atari read information from the screen editor. Here's how it works:

4030—Halfway down the screen, your Atari prints:
30 FATX =

Note that the cursor remains at the end of this line and does not return to the left margin.

4040—Here, we INPUT the function to be plotted, filling in the right half of line 30. (Be sure to use proper BASIC syntax.)

4045—The computer skips a few lines and prints the word CONT.

4050—The computer places the cursor several lines

above line 30.

4060—The statement POKE 842,13 places your Atari into forced read mode. (This POKE is followed by a STOP command, which we'll discuss shortly). If you imagine an invisible hand pressing [RETURN] over and over again, you'll get a good idea of what this mode does.

Let's use COS(X)*SIN(X) as a sample function. Here's what the screen will look like:

```
Enter a function

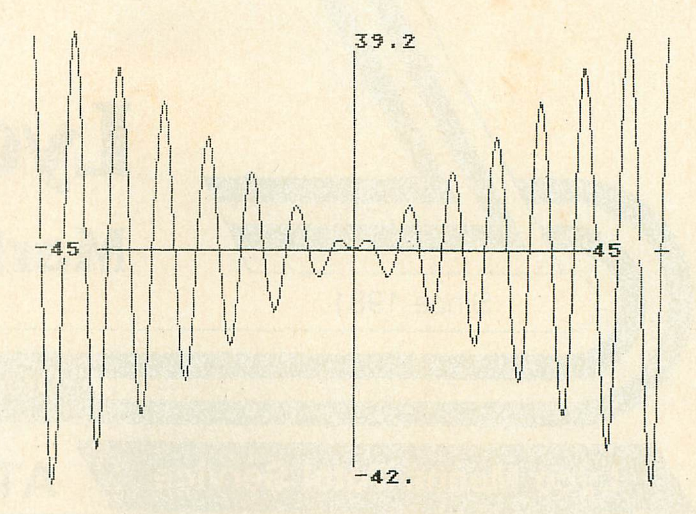
          'FATX'=your function

30 FATX=COS(X)*SIN(X)

CONT
```

Starting near the top of the screen, our "invisible hand" presses one carriage return after another. If the cursor happens to be on the same line as a BASIC statement when the invisible hand presses [RETURN], then that statement becomes part of the program. If the cursor is on the same line as a BASIC command, then that command is executed.

The first line this the cursor passes across is our new line 30. This automatically replaces our old line 30.



The STOP command in line 4060 STOPs your program, but it does *not* stop the forced read mode.

Next, the cursor passes across the word CONT, a BASIC command which tells your program to CONTinue running, beginning at the next line.

4070—The statement POKE 842,12 deactivates the forced read mode. Your Atari functions runs normally again. ■

---

*Robert Witzofsky is a junior at Washington University of St. Louis, majoring in electrical engineering and computer science. This is his first appearance in **Antic**.*

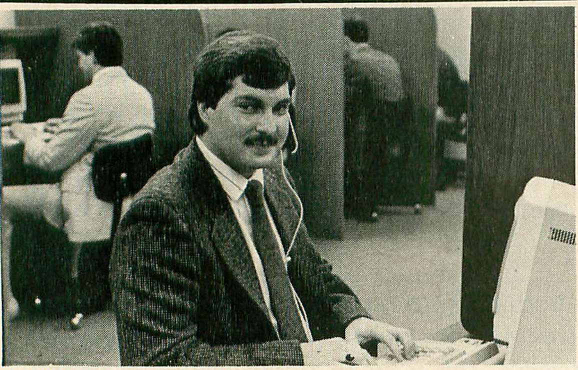
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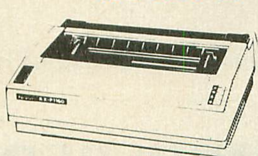
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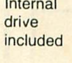
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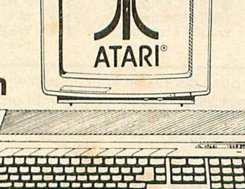
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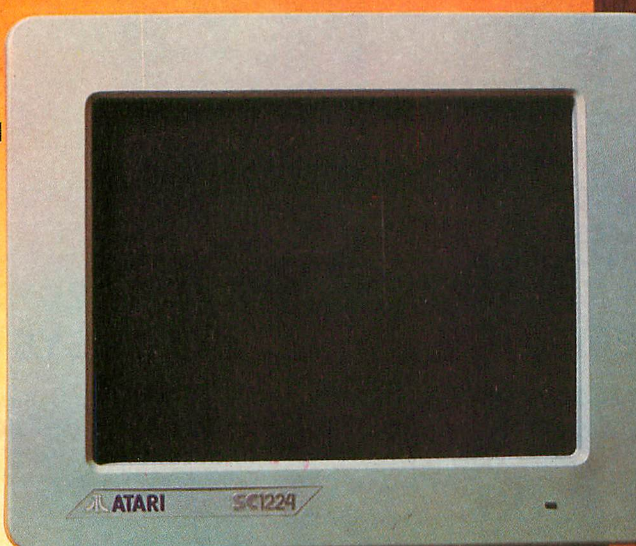
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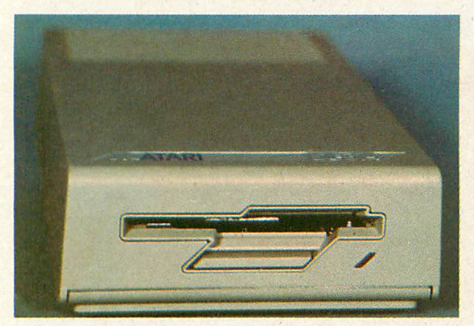
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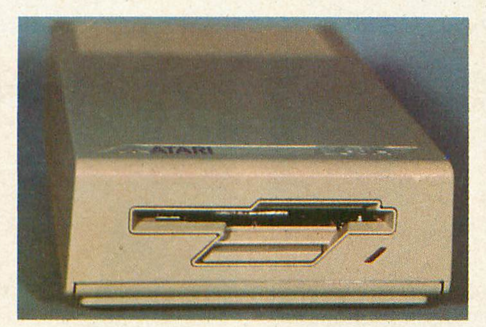
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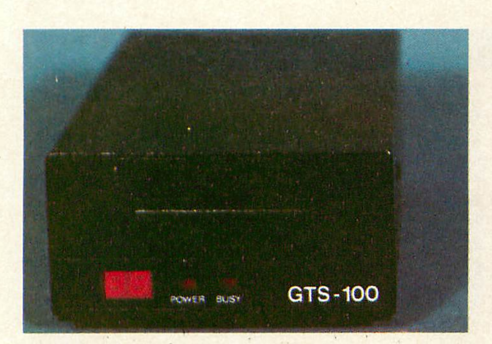
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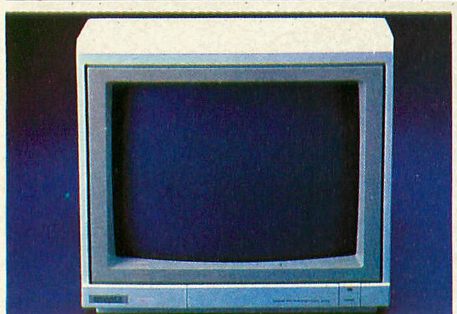


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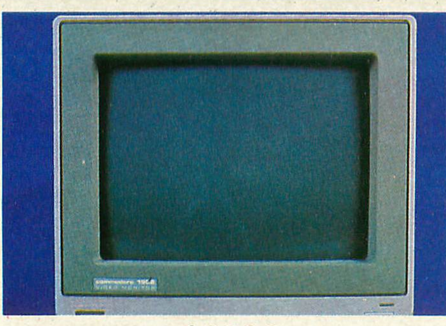
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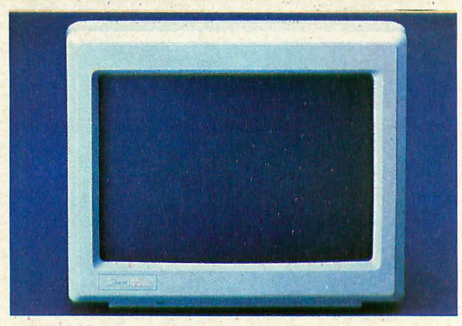
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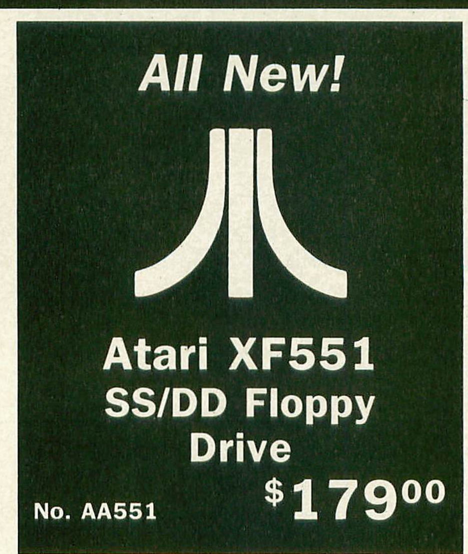
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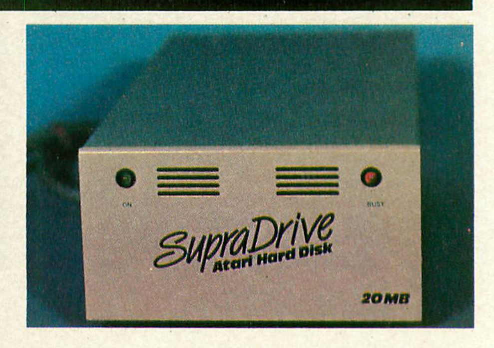


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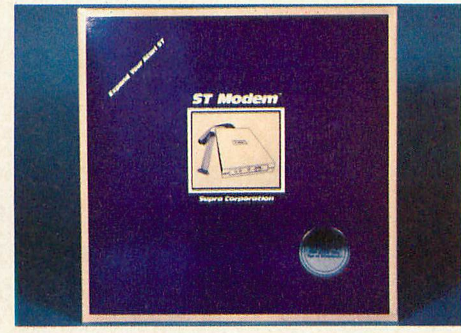
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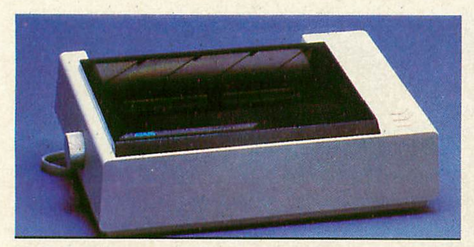


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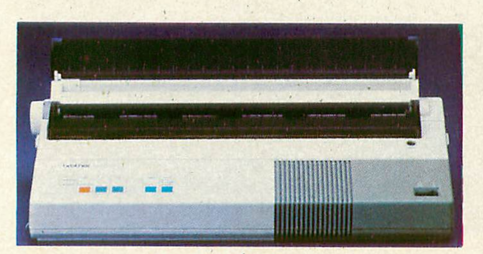
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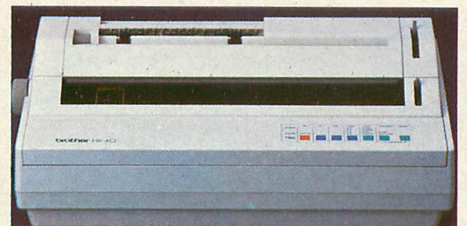
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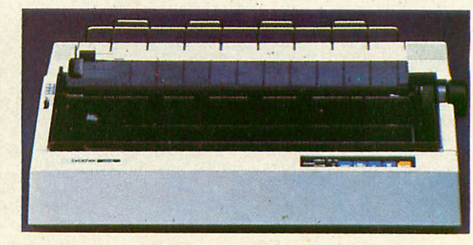
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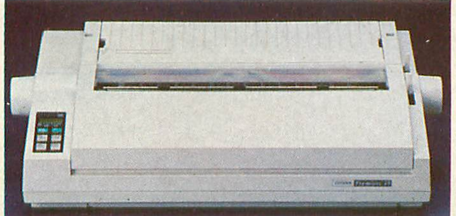
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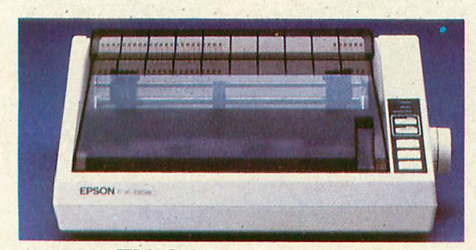
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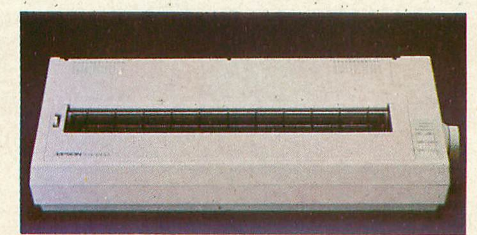
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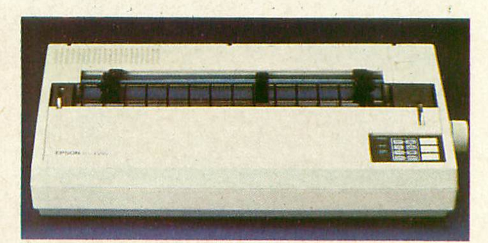
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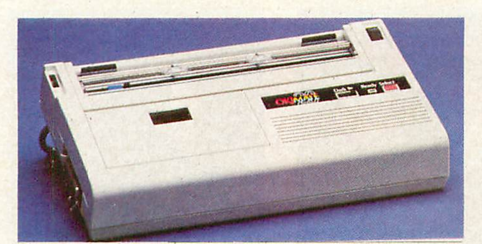
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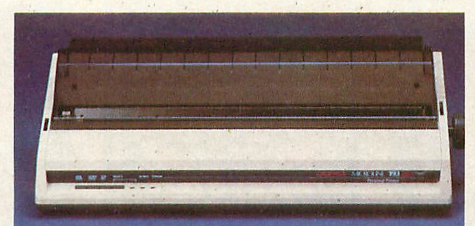
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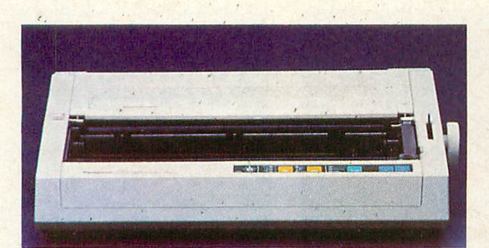
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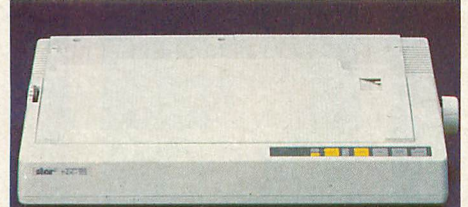
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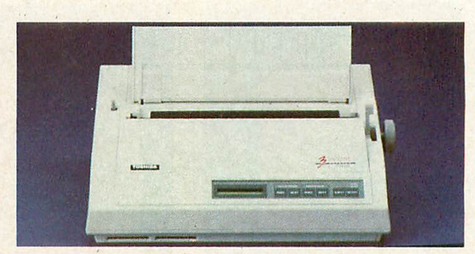
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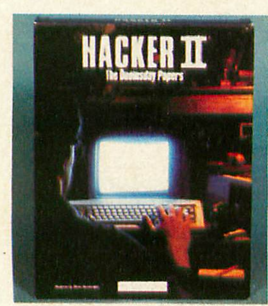


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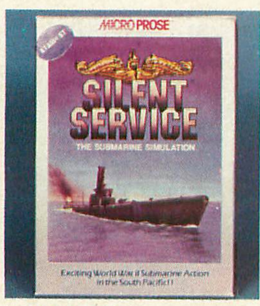
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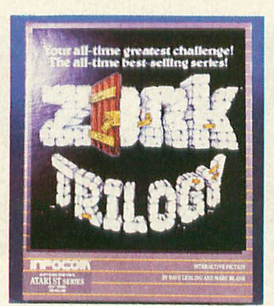
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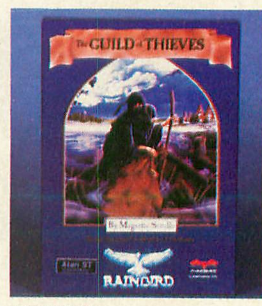
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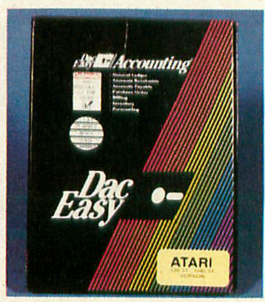
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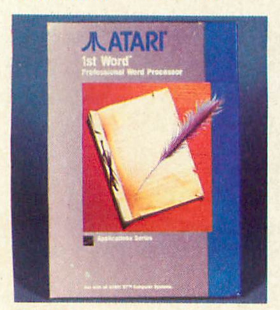
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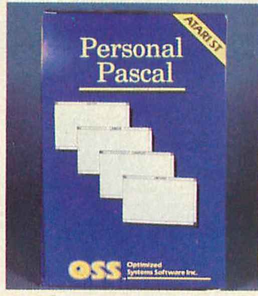
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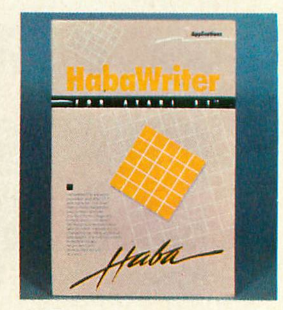
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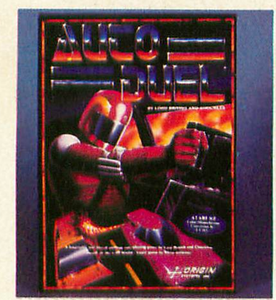


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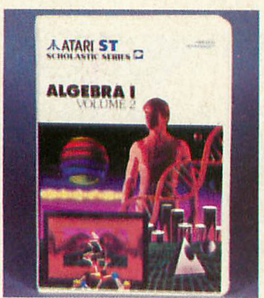
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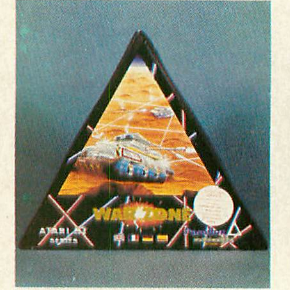
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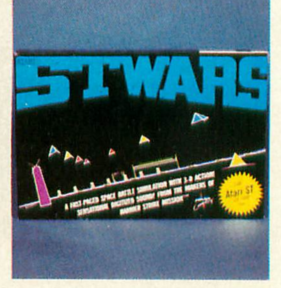
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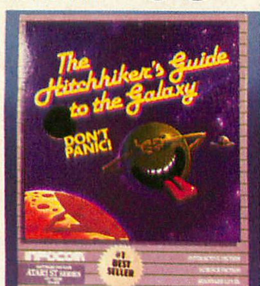
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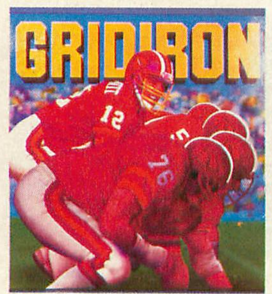
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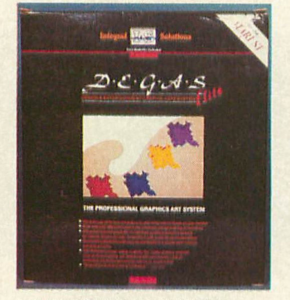
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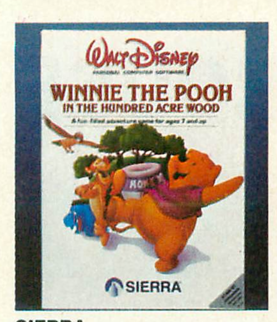
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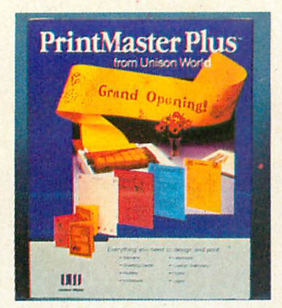
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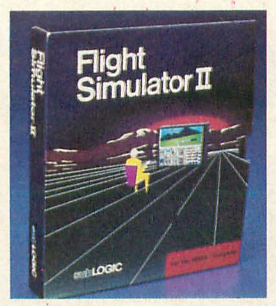
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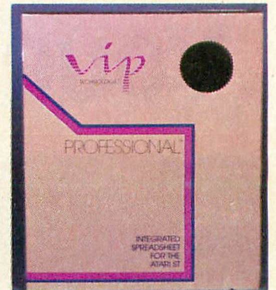
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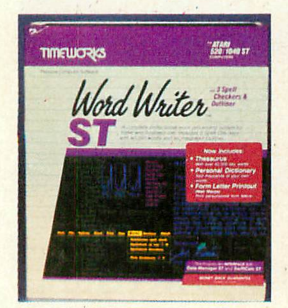
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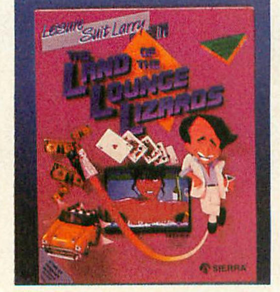
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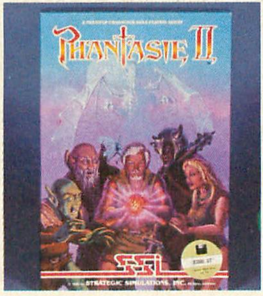
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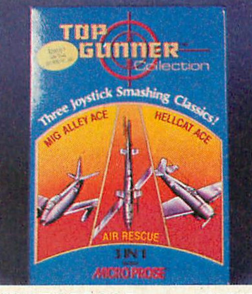
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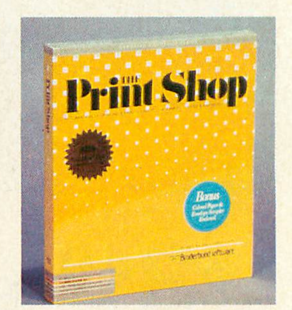
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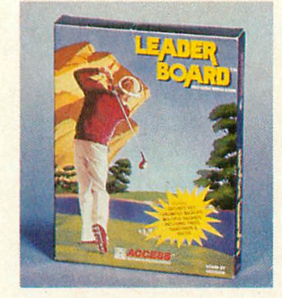
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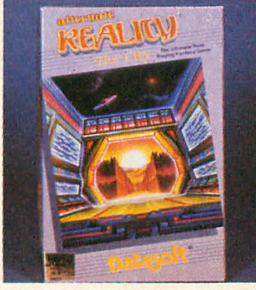
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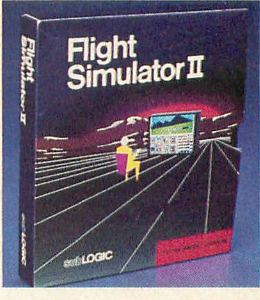
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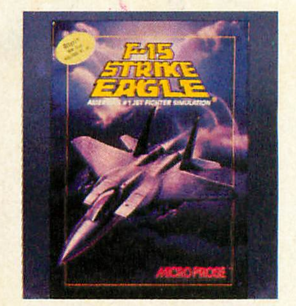
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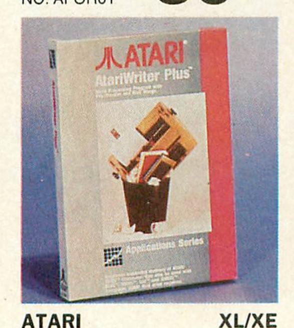
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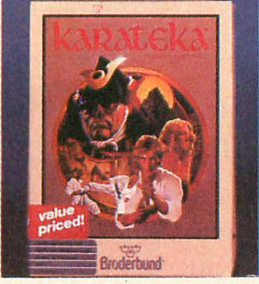
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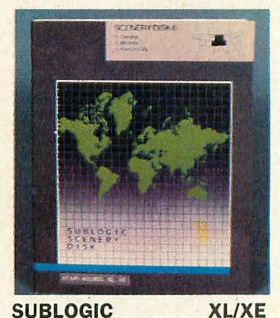
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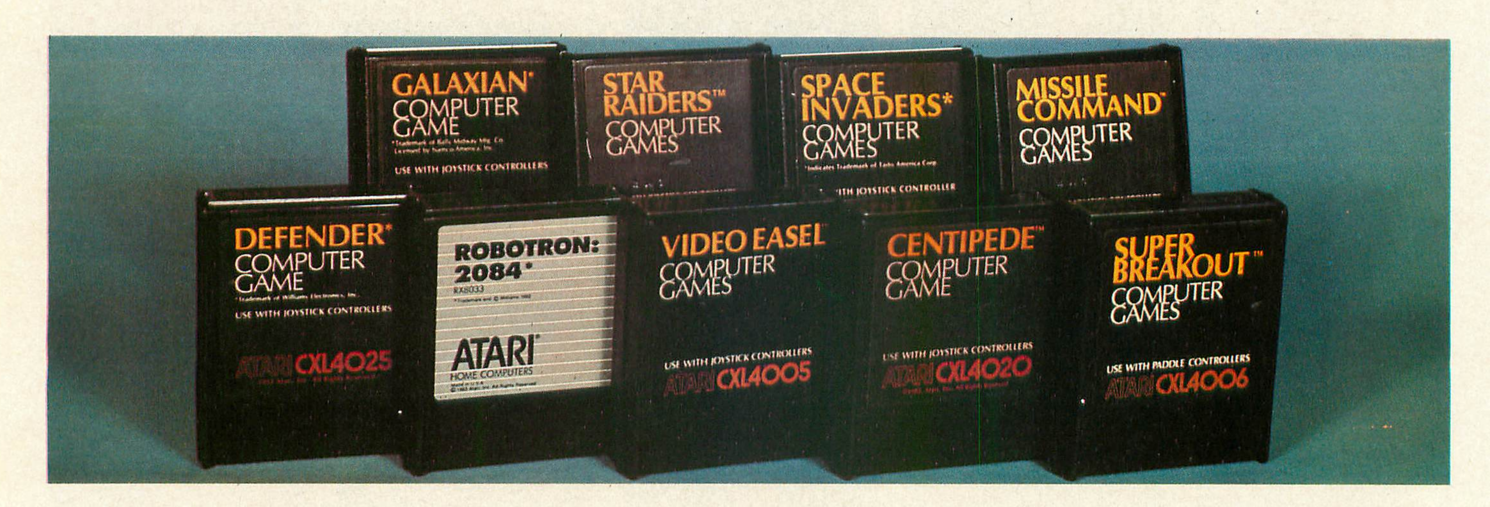


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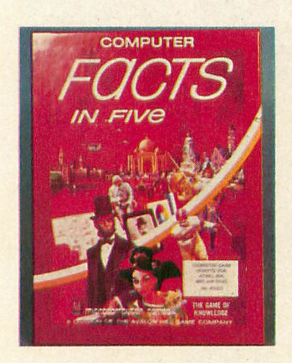
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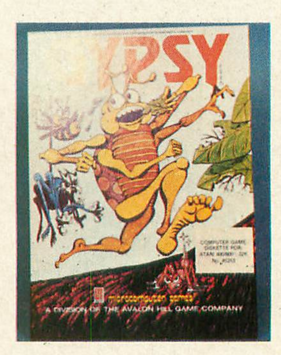
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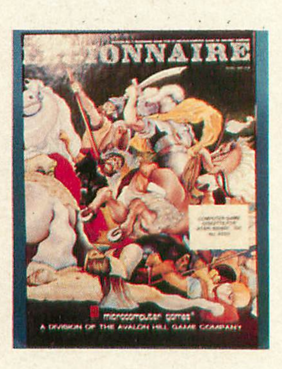
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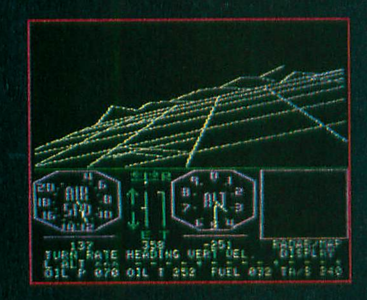
1986 - Flight Simulator II for the 68000 computers



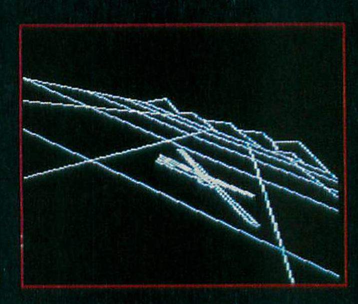
1985 - High-performance Jet flight simulator for the IBM, Commodore 64, and Apple II computers



1982/1983 - Microsoft Flight Simulator & Flight Simulator II



1979 - 3D graphics applied to the original FS1 Flight Simulator for the new Apple II and TRS-80 computers



1977 - SubLOGIC's 3D graphics package in BASIC and M6800 Assembly Language

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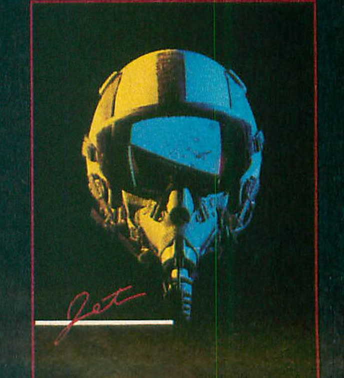
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News Station Page-Designer

All the power you need . . . right now!

by STEVE FISHBEIN

An editorial in the June, 1987 issue of **Antic** urged readers to write to Springboard Software requesting release of the Newsroom page designer for Atari 8-bit computers. I have used Newsroom (on a well-known 8-bit computer that's inferior to the Atari) and I can tell you that Atarians have better software than Newsroom available right now!

Reeve Software is a small Atari software company in Illinois. Alan Reeve's **News Station** ($29.95, 48K disk) is more versatile and easier to use than any current version of Newsroom ($49.95, Apple, IBM, C-64). News Station was programmed specifically for the 8-bit Atari, so it takes good advantage of the Atari's powerful graphics tools.

And now, the brand-new **News Station Companion** ($29.95, 48K disk) brings in four new features that give the base software considerably more power. The Companion creates headlines that go across the top of the entire page, matching Newsroom's "banner" mode. It compresses eight

Steve Fishbein of Newport News, Virginia wrote to **Antic** *about how he uses News Station. His letter was so detailed and informative that we assigned him to review the entire line of Reeve page design software.*

continued on next page



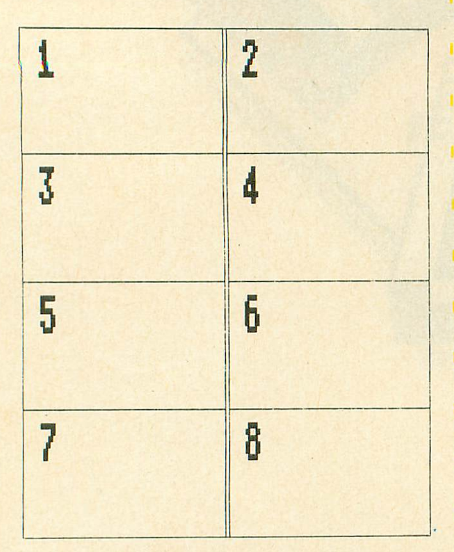


FIGURE 1, Arrangement of eight plates making up a News Station page.

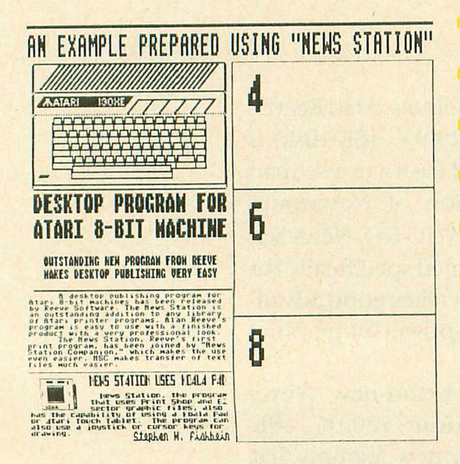


FIGURE 2, Partial News Station newsletter page.

52-sector News Station plate files into a single page file that requires much less disk space. Long, multi-page text files can be accepted now, as well as unconverted KoalaPad graphics.

The $60 total cost of News Station and News Station Companion is $10 more than Newsroom. But News Station is a better value because the only way to get additional graphics into Newsroom is to buy clip-art disks at $30 to $40 each. In money-saving contrast, News Station can import graphics from all the most common Atari formats.

Here are some of the ways in which Reeve's News Station leaves Springboard's Newsroom eating dust.

NEWS STATION	**NEWSROOM**
TEXT:	
Any Atari font	5 fonts
64 font sizes	2 font sizes
GRAPHICS	
No preparation	3 steps needed
COMPATIBILITY:	
Print Shop icons (3 sizes)	Clip-art disks ($30-$40 each)
Micro-Painter	
Micro Illustrator	
Direct drawings	

Also from Reeve Software is **Publishing Pro** ($39.95, 48K disk), an "advanced version" of News Station that can produce a full page of text and graphics without using plates. But to accomplish this, it sacrifices some versatility and ease of use. Text fonts and sizes cannot be changed within a page, and you must figure the X,Y coordinates to position each element of the page.

News Station was given a short write-up in the July, 1987 **Antic** feature review of printer software (page 17). I felt that the reviewer missed much of the versatility of this program, even though he called News Station "an ideal tool for putting text into a picture" and admitted that the program "works fine for two-column printouts."

Simple page-design software like News Station and Newsroom get around the memory limits of a 48K or 64K computer by dividing a full page into eight equal "plates." Each plate uses a single computer screen which is saved as a separate file. *Figure 1* shows how the eight plates are linked together to print a full page. (I drew boxes around the plates to demonstrate how they line up.)

This method may not be "true desktop publishing" like Pagemaker, Ventura Publisher and Ready, Set, Go, or the Atari ST's Publishing Partner and Fleet Street Publisher. But it doesn't carry the hefty price tags ($120 all the way up to $900) of these laser-oriented programs either.

Eight-plate page-design software uses standard, inexpensive dot-matrix printers and is terrific at producing informal newsletters, flyers, signs and brochures—that most people really need for their personal desktop publishing.

TEXT

News Station and Newsroom both come with five built-in fonts. But News Station also lets you use any nine-sector Atari font—in eight heights and eight widths.

A height-to-width ratio of 2 to 1 seems to provide the best-looking characters, but there are times when variations might make a font more readable.

The standard Atari font remains in memory along with one selected user font, which can be changed at any time. Once placed on the screen, characters remain in the chosen font.

An article might have a large headline, a slightly smaller subhead and normal-sized copy. Subheads can also be used throughout an article to emphasize sections of the copy.

Text can be entered onto the plate from an ASCII file on disk or by typing it in. News Station does not have word wrap, but because the program remains in type-over mode, changes can be made easily.

News Station text files must be broken down into plate size before being transferred. However, News Station Companion eliminates this restriction and lets you set pages in as many as four columns.

News Station accepts three types of graphics: Print Shop icons, Micro-Painter files and direct drawings, using a joystick, KoalaPad or Suncom's

Animation Station as input devices.

Any number of Print Shop icons can be entered directly onto the plate and enlarged to double-size or triple-size.

The ability to use Micro-Painter files opens the door to use of virtually any graphic by using The Rapid Graphic Converter (**Antic**, November 1985) to adapt other graphic files. A utility in News Station Companion also makes it possible to use Micro-Illustrator graphics directly.

There are few commands in News Station and most are mnemonic. [CONTROL] [G]raphics toggles with [CONTROL] [T]ext. [CONTROL] [A]tari and [CONTROL] [U]ser toggle the font in use, selected with [CONTROL] [F]ont.

Putting a graphic onscreen requires typing [CONTROL] [G] to put the program in graphics mode, typing [CONTROL] [D] to get a directory of graphics, putting the cursor at the upper left-hand corner of the location you want the picture and then selecting the picture from the directory which scrolls the bottom of the screen.

HINTS

If you don't own News Station Companion, you need to use indirect methods to print a banner headline across the top of the page. To obtain that effect in *Figure 2*, I counted characters. For plate 1, I counted back from the center, placed the letters in two different sizes and fonts, and then saved that plate.

The next step was to do the right half, working outward from the center, but instead of clearing the first screen I matched characters so they would line up correctly, and I used the type-over mode to clear unwanted copy. X and Y coordinates are available, but I find it easier to match using a previous screen.

Also in *Figure 2* the 130XE filled plate 3. The headline and subhead on plate 5 were separated by a drawn line, and the copy was then begun on the lower part of the plate, continuing on plate 7. A line divides the two articles.

A News Station customized calendar for my users group newsletter is shown in *Figure 3*.

NEWS STATION COMPANION

News Station Companion is a collection of four utilities that make the original News Station even more powerful and versatile.

The Companion's Plate Manipulator utility makes it a lot simpler to create banner headlines across the top of the page. The banner can be created on a single plate, which can then be enlarged to cover the full top of the page. Or it can be centered, as is, on top of the page.

The Plate Manipulator takes the single plate and converts it into plates 1 and 2. If the centering option is selected additional material could be added to fill the extra white space.

The manipulator can also be used to expand two plates vertically, which permits placement of an extra-large graphic.

Another important Companion utility permits use of longer text files. The text file is loaded into the Companion utility and a page, broken down into eight News Station plates, is created, a routine that does take about 20 minutes.

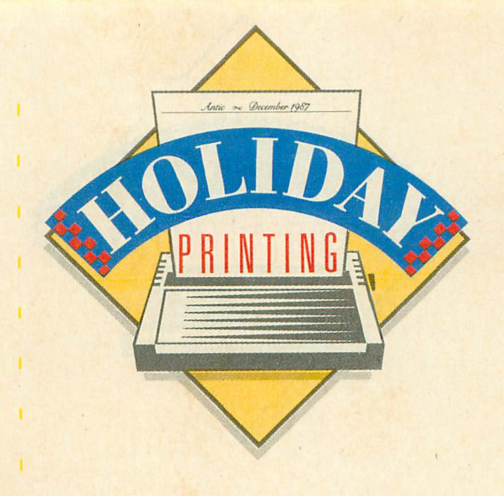
The page can include 1, 2 or 3 columns of type—80, 39 or 26 characters wide. If the 26 or 39 column option is taken, I recommend loading the plates back into News Station and adding a vertical line to separate the columns.

If the file is longer than a page the program allows conversion of pages by page number.

The basic News Station program accepts KoalaPad Files that have been transformed into Micro-Painter format. But only the top five-sixths of the picture can be used. But now a Companion utility allows direct entry of graphics from a KoalaPad (or Suncom Animation Station) file and also permits using either the top five-sixths or the bottom five-sixths, or even just a center section.

The fourth utility in the Companion is the Library. A News Station plate requires 52 sectors of disk storage and an entire page (eight plates) takes up

continued on page 46



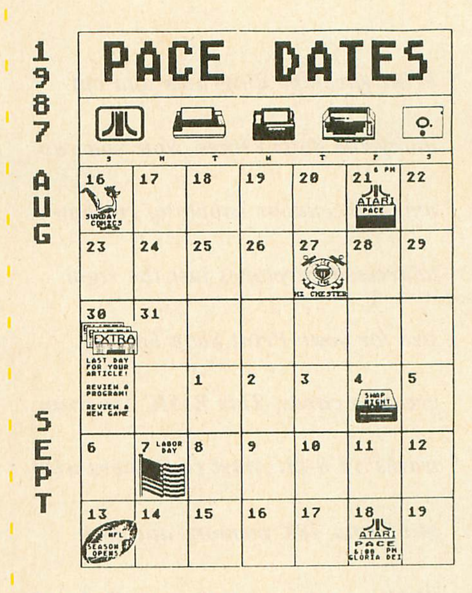


FIGURE 3, News Station calendar for users group, starts at mid-month.

THE ANTIC REVIEW

NEWS STATION

PUBLISHING PRO

This is a sample of Publishing Pro, a program that accomplishes the same task as News Station, but goes about it in a much different manner.

The first step is to put headlines on the page, using nothing but the x/y coordinates. Centering is automatic if a full page is used, but sub-heads may require some counting to center them.

For the title, "The Antic Review," I used centering, a bold font and went to four times size. Sub-heads 1 and 2 are normal font and size, but a set apart from the copy.

I typed in this copy, but PP uses ASCII files. I set the column size at 39 spaces wide, to leave a space in the middle, and 52 lines long. That would make line 58 the end of the article.

As I state in the review, I find it much easier to use News Station, partly because it requires less planning and I prefer to make-up as I go.

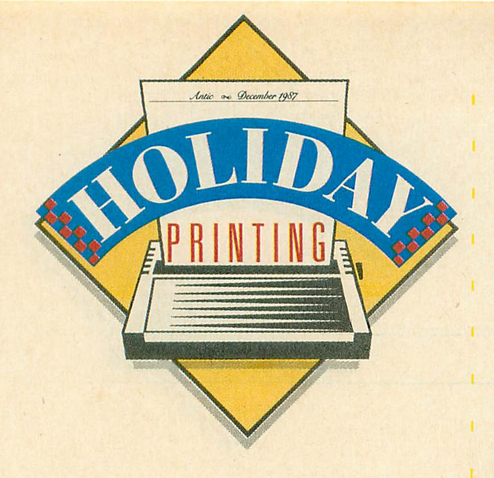
Diagram three is what you see when you start to print a page. The areas that are used are blocked out, so if you spot a major error, where things run together, you can re-do the page.

I wasn't sure how I could draw the blank spaces, but then realized that a nice feature of News Station is the graphic capability.

Diagram three is a News Station plate that has been turned on its side. I drew the blank sections and then to complete the diagram added the letters, using the Atari SIDEWAYS font so that they would be readable when the plate was turned on its side.

As you can see, I'm simply filling some space here so that Diagram four will have material in it.

FIGURE 4, Publishing Pro partial page.



P.S. Envelope Maker

Just right for your Print Shop cards

by TODD THEDELL

Print envelope diagrams and cut along the dotted lines. Now you can make an endless supply of custom-addressed envelopes just the right size for your Print Shop holiday greeting cards. This BASIC program works on 8-bit Atari computers with minimum 48K memory and disk drive.

Easy page-design programs such as Print Shop are among the most widely-used programs available for 8-bit Atari computers. In fact, Print Shop is one of the few programs that my wife regularly uses. Our friends have marveled at the "cute" greeting cards we make.

My wife complained that our cards wouldn't fit in conventional envelopes and that it looked "tacky" to fold them. Thus was born Print Shop Envelopes. If you can cut and fold paper, you can make custom-sized envelopes for Print Shop cards.

You can even use the Print Shop Envelopes program to address your cards. Type in as many as four lines for the addressee and make edits before you print. Your return address is also stored inside the program so you don't need to type it in each time. You can change the return address whenever wish—or use none at all.

The program will run on any 80-column printer that works with Print Shop.

(*Antic would be interested in publishing the first good programming patch we receive that enables Print Shop Envelopes to use mailing lists set up in ASCII text files. The patch should run with* Mighty Mailer *from the Sept. 1987 issue.*—ANTIC ED)

GETTING STARTED

Mail your Print Shop cards in the custom-made envelopes they deserve. Type in Listing 1, ENVELOPE.BAS, check it with TYPO II and SAVE a copy before you RUN it. When you type it in, be sure to put your own name and address into the DATA statements in lines 210-230. Be sure to use *inverse characters*, which lets you include commas in your address.

To use the program, simply type answers to the prompts, turn on your printer and print away. After an envelope is printed, remove the form feed guides from the paper (if you're not using single sheets) and cut along the dotted lines. (See *Figure 1.*) Fold the bottom flap and then the top flap. Fold the side flaps under and glue them to make the envelope pocket. Insert your card and then glue or tape the upper flap shut for mailing.

The whole process is just as simple as anything else you do with Print Shop. Just don't forget to attach a stamp before you put your Print Shop greeting into the mail. ■

Todd Thedell is a computer science teacher for the U.S. Military Dependent Schools in Europe, where he was recently transferred from Norway to Germany.

Listing on page 63

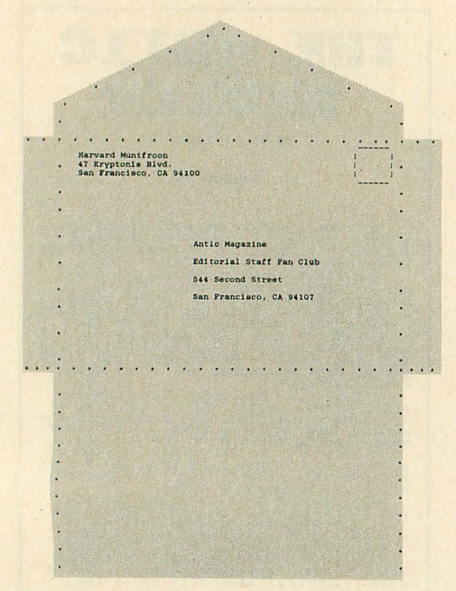


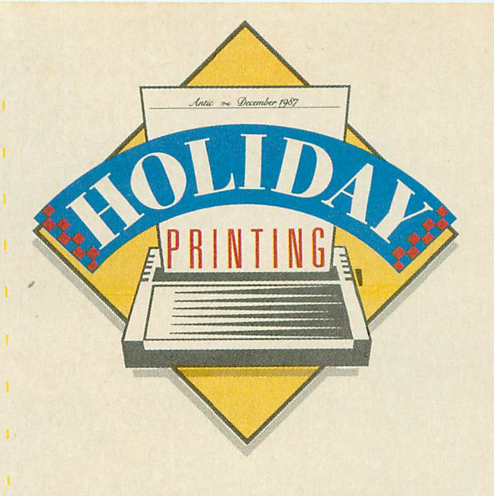
Figure 1

Antic Magazine
the Atari Resource
ЛЛЛЛЛЛЛЛ
iiiiiiiiiiiiiiiiiiiiiiiiiiiiiii
proportional spaces
000000000000000000
hijack Л kern
fig.1

Print Shop Power Tricks

Timely tips for your Christmas cards

by JOHN SPIRKO



Master advanced Print Shop techniques not documented with this popular software. Find out how to mix uppercase and lowercase letters, and how to place multiple graphics on the same page. These power hints require Print Shop and Print Shop Companion from Broderbund Software, an 8-bit Atari with minimum 64K memory, disk drive and dot-matrix printer with graphics capability.

Print Shop by Broderbund Software has probably been the most widely used Atari printing program since it was converted from the Apple II in 1985. The later introduction of Print Shop Companion, with its Graphic Editor+, Border Editor and Font Editor, expanded the Print Shop's usefulness even further. But even with these extras, there are still some annoying limitations.

For instance, why can't you have fonts with uppercase *and* lowercase letters? And aren't there times you'd like to put two or more different graphics on the same page? But there *are* ways to do these things, as this article will explain.

MAKING ULC FONTS

Currently Print Shop doesn't offer a complete upper/lowercase (ULC) font. But we can convert portions of the lowercase font into uppercase letters. *Figure 1* has text printed in what appears to be a ULC font. Actually, I modified the lowercase font to create *only* the specific uppercase letters necessary for this text. In this example, I only needed to modify a few letters—M, R and two different A's.

FOR LONGER TEXT

Here's how to modify the font for the word Antic. Select the Font Editor from Print Shop Companion and load in the lowercase font on side 2. Convert the "a" on the editing screen to uppercase. Your new temporary font is now ready to be saved on disk with a new filename. Then load Print Shop's sign option. (Ignore borders and graphics until you have more experience with this process.) At the font entry screen, load in your temporary font. Type ANTIC on the text entry screen, turn on your printer and print your first ULC text.

continued on next page

*John Spirko is an import specialist for an aerospace company in Fort Erie, Ontario, Canada. This is his first publication in **Antic**.*

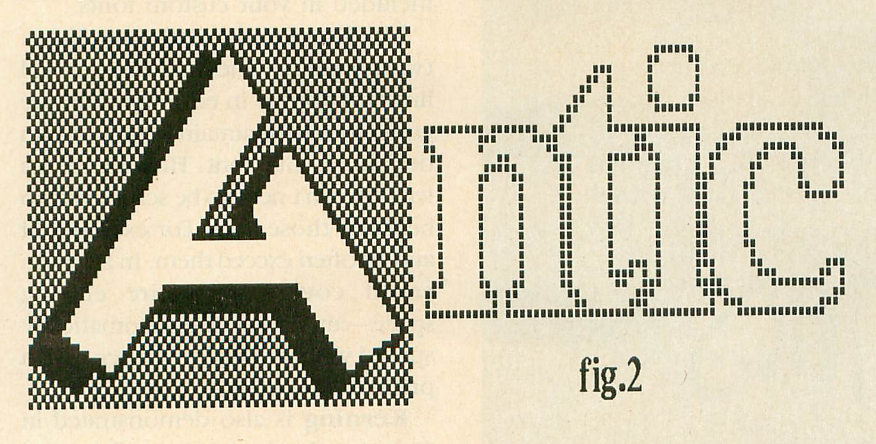


fig.2

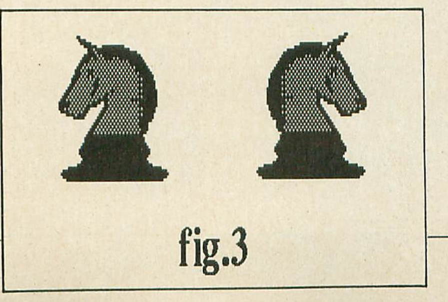


fig.3

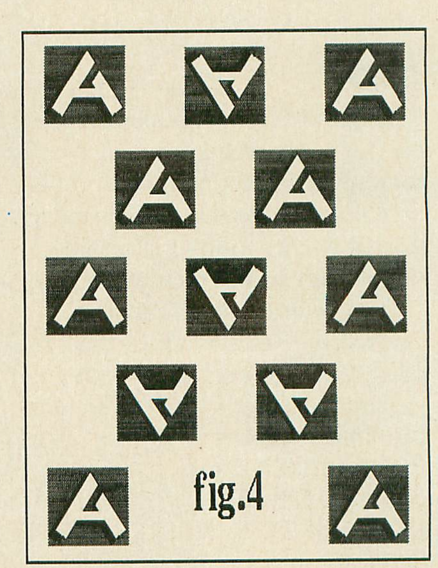
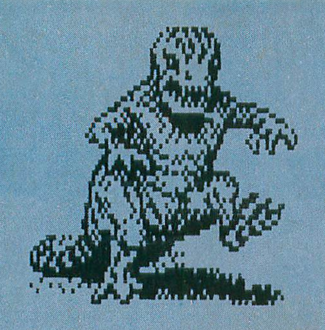


fig.4



More icons for Print Shop

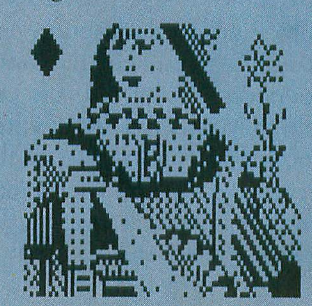
by GREGG PEARLMAN, *Antic Assistant Editor*

Third-party Print Shop images have been a staple of smaller publishers and public domain ever since Broderbund brought out their popular page design software. Here are some ambitious icon collections recently examined at **Antic**. Unless stated otherwise, all disks mentioned below require the basic Print Shop program disk and at least 48K memory.

NO FRILLS

No Frills Software currently has 10 Print Shop image disks available for the 8-bit Atari. Three of these disks are budget-priced $6.95 public domain anthologies. Another three-disk series of Fonts and Borders requires 64K memory and Print Shop Companion software. Fonts include Backwards, Doublevision, Rodeo and Orient2. Borders include squares, boxes and three golf-related designs.

No Frills also markets two Davkagraphics disks (created by Davka Corp. of Chicago) containing Hebrew letters and Judaic symbols—over 70 images on each disk. And there's a Christian Scenes and Symbols disk (originated by Donaldson Graphics of Pittsburgh) containing 100 designs that include borders and, naturally, "icon" icons.



JACS

The four Print Shop Icon Disks of the Jersey Atari Computer Society (JACS) are well-known in users group circles. Each disk contains more than 100 icons apiece. Images include Atari computers, commercial products, cartoon characters, military symbols, a reproduction of Grant Wood's masterpiece, *American Gothic*, sports-related visuals and scenic pictures.

JACS is currently finalizing a deal to have No Frills release this disk series commercially. ■

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JACS

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DavkaGraphics 1 & 2—$22.95 each
PS PD Graphics 1, 2 & 3—$6.95 each
Christian Scenes and Symbols, $22.95
PS Fonts and Borders 1, 2 & 3—$19.95 each (64K)
CIRCLE 161 ON READER SERVICE CARD

Simply changing lowercase into uppercase won't work in longer text. Using our previous temporary font, your printer would produce "Antic mAgAzine, the AtAri resource." Making a temporary font for longer text requires extra planning.

Write down your text and mark the uppercase letters. Check for duplicated uppercase letters in the lowercase text. In our example, the M doesn't show up in the lowercase text, so we can replace it with an uppercase M. However, both uppercase and lowercase A's and R's are required. You can replace these letters with unused letters, numbers and punctuation.

For instance, put 1 on the editing screen, clear the screen, and create the uppercase A. Store the uppercase A as 1, the R as 2 and use M instead of m. Note the changes as you create the font. Type "1ntic magazine, the 1tari 2esource." With some font editing and minor character manipulation, your second temporary font is ready to be saved to disk.

Don't limit your font just to letters and numbers. Each unused character can be turned into anything you want. Try including a simple graphic or two. In *Figure 1* you'll see two different uppercase A's and an Atari symbol. These were all created with the Font Editor and are part of the font. Electronic symbols, trademarks, astrology symbols, monograms, etc. can also be included in your custom fonts.

The Font Editor's **indexing lines**, two horizontal lines and one vertical line that appear in editing mode, are guidelines to maintain continuity in designing your font. However, each letter doesn't need to be scrunched up between those lines. For example, M and W often exceed them. In fact, you could cover the entire editing space—and it will be automatically spaced with any adjacent letters when printed.

Kerning is also demonstrated in *Figure 1*. Look closely at the word "hijack" and you will see that part of the j is actually under the i. Experiment with i, j and other letters to see how it works. Kerning would be impossible without **proportional spacing**, which, simply put, means

you can pack more I's on a line than O's.

LAYOUT GRAPHICS

While the Font Editor does well with fancy uppercase letters, consider the Graphic Editor or Graphic Editor+ instead. The Graphic Editor, with its larger editing space, allows for greater detail, as shown in the Antic A in *Figure 2*, a two-page banner printout. This not only provides a unique capital letter but adds another graphic to your collection.

For the banner in *Figure 2*, I used the Graphic Editor+ to create the Antic A and saved it to disk. Then, using the banner option, I loaded in the standard lowercase font. At the text entry screen I typed just "ntic". Then I loaded the *graphic* Antic A, positioned it before the text and printed the banner.

Graphics and text are automatically spaced 1-1/2 inches apart in banners, but here's how I managed to avoid this in *Figure 2*. After the graphic is printed, the printer advances the paper 1 1/2 inches. It then stops briefly before it begins printing the text. As soon as it stops, press [ESCAPE] to *pause* the printing process. Roll back the paper so the print head is about 1/4-inch below the graphic, then press [RETURN] to resume printing.

The Layout Guide accompanying this article is a handy reference comparing the graphic sizes and positions for Print Shop's flexible sign option, which provides three mixable text modes—solid, outline or 3-D. You have considerable freedom in positioning small or medium graphics with the Custom Layout feature.

COMBINING GRAPHICS

Combining two different graphics on the same page requires several steps. Print Shop signs are normally printed in one pass, but if you make *two* print passes, you can add a different graphic on the second print pass, as shown in *Figure 3*. The most important step is setting up the paper in your printer so that each print pass starts at the same location and aligns with the previous pass.

First, load Print Shop and select the sign option. (I again suggest ignoring borders and text until you're experienced with this procedure.) At the graphic entry screen, select your graphic—medium-sized in this case. At the custom layout entry screen, select position one—the top left corner. Turn on your printer and prepare your paper.

Usually you'll have to waste a page. Mark your lead-in page (the page *before* the one being printed) so that the paper can be returned and exactly realigned for a second pass. The easiest way to do this is with a line across the tear bar (the bar that keeps the paper pressed to the roller).

Next, prepare to print the second graphic. Return the paper to the same position, using the mark on the lead-in page. Insert side 1 of Print Shop and press [RETURN] to go back to the program. Press [ESCAPE] to back to the graphic entry screen. Put your graphics disk in the drive and select your second graphic, using the same size.

At the custom layout entry screen, delete graphic position one (still in memory) and select position two (top right). Then print the second graphic. If you've aligned the paper correctly, the graphics should be positioned side by side at the top of the page.

Figure 4 is a similar example of multiple print passes, this time with small graphics. Here, the Antic A was combined with an inverted A. Load Print Shop, select sign, go to the graphics entry screen and select a graphic. Plot the position of each (from the Layout Guide) to avoid overprinting on the second pass.

In *Figure 4*, the first print pass positions (1, 2, 4, 6, 8, 9, 11 and 13) were chosen from the custom layout entry screen (small graphic) and the sign was printed. Return the paper to the original print position. Insert side 1, return to the graphic entry screen and select the second graphic.

Notice that the program has kept your parameters in memory and it's easy to cycle backwards through the program. At the custom layout entry screen, delete the first print pass positions and enter the second positions

continued on page 46

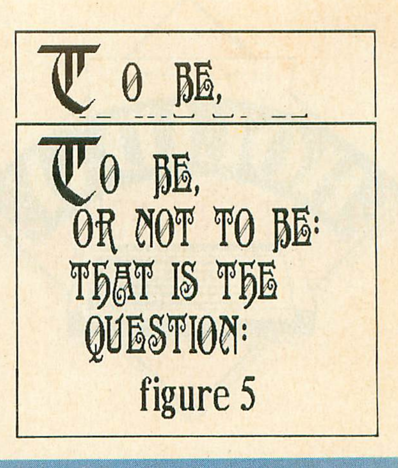
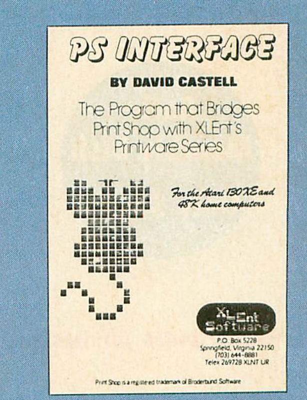
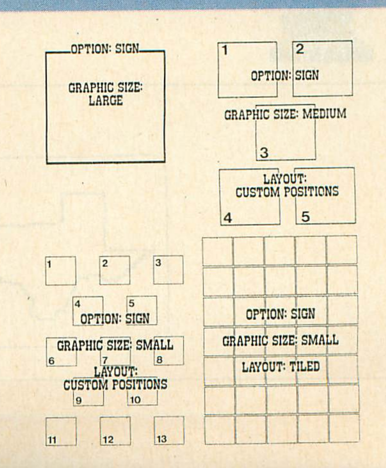


figure 5



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CIRCLE **160** ON READER SERVICE CARD

XLEnt's popular printing software series gives 8-bit Atari users another choice of tools for mixing graphics and text elements on a page. These related programs make a flexible and powerful page layout package that combines much of the best of Print Shop and Newsroom. Many features, in turn, means many commands to master. XLEnt's new **P. S. Interface** converts Print Shop icons for use with **Typesetter**. ■





Designer Labels Mail-Merge

Print Shop icons for your mailing lists

by JAMES PIERSON-PERRY *and* WALT McCREA

Antic Monthly Disk Only $5.95

With this short patch for* Designer Labels *(Antic, April 1987), you can decorate your mailing-list labels with Print Shop icons. This BASIC program runs on 8-bit Ataris with 48K memory and a disk drive. The patch has been tested to work with* Mighty Mailer *(Antic, September 1987) and Broderbund's SynFile + software.

"Transfer Print Shop images to stick-on labels along with your own text." That's what James Pierson-Perry's *Designer Labels* does, and it has been a popular **Antic** program since its appearance in the April, 1987 issue.

A July, 1987 I/O letter explained how *Designer Labels* could use graphics from Broderbund Software's *original* Print Shop disk as well as the Print Shop Library series. The secret: From the Print Shop Graphic Editor module, GET any design and SAVE it to a data disk formatted with Print Shop.

Then, some weeks later, **Antic** received a program patch from Walt McCrea of Canton, Michigan which would enable *Designer Labels* to print images on mailing list labels with text merged from standard ASCII files. As originally programmed, *Designer Labels* required you to type in all text changes for the labels. In other words, the program was set up to print fancy return-address labels—not to illustrate a series of labels with many different addressees.

Antic sent McCrea's patch to Pierson-Perry, who fine-tuned it to work with all the printers that support Print Shop.

Preparing your mail list file may be the tricky part. For example, with Broderbund's SynFile + database software you'll have to *print* the mailing list to disk instead of *saving* it. However, this *Designer Labels* add-on should work with just about any mailing list produced in a standard ASCII text file. **Antic** has tested this patch to work with *Mighty Mailer* from the September, 1987 issue as well as SynFile +.

To use the patch, Type in Listing 1, PSLMOD.LST, check it with TYPO II and LIST it to disk. LOAD the *Designer Labels* program. Then ENTER the patch. Be sure to SAVE the modified program before you RUN it.

When RUN, Designer Labels includes the option "print file." After loading a graphic, choose this option, and at the prompt "Load which file?" type in the name of your mail list. (You don't need to type the D:").

The program will now ask you "HOW MANY LINES?" Most addresses are three lines long. If there are any blank lines separating addresses, count them, too. If your mailing list uses three-line addresses, and there is one blank line between each address, type the number 4 at the "HOW MANY LINES?" prompt.

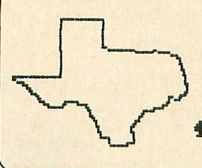
If your mailing list contains addresses of varying sizes, you'll have to edit your list so that each address occupies the same number of lines. Either add blank lines to "pad" shorter addresses, or condense longer addresses. But make sure that none of your address lines is longer than 26 characters.

Next, the program will ask, "HOW MANY RECORDS?" Answer with the number of addresses in your mailing list. Now sit back and wait for your printer to do the work. ■

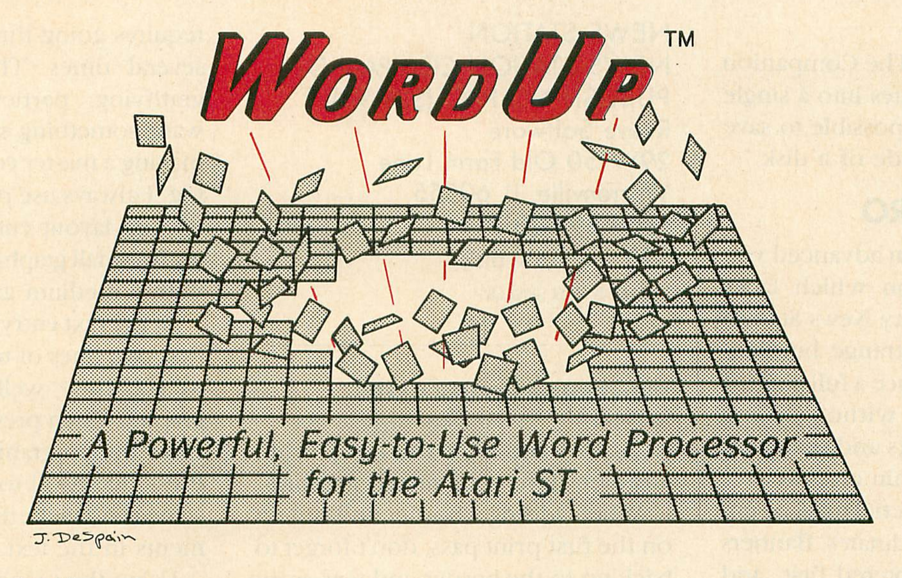
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NEWS STATION
continued from page 39

416 sectors (52×8). The Companion compresses eight plates into a single file, which makes it possible to save two pages on one side of a disk.

PUBLISHING PRO

Publishing Pro is an advanced version of News Station which lacks much of the versatility News Station offers. That sounds strange, but Publishing Pro can produce a full page of text and graphics without using plates. However, fonts and sizes cannot be changed within an article.

Publishing Pro material must be entered using X,Y coordinates. Banners and headlines are entered first, and then areas for copy and graphics are blocked out for direct entry or disk files.

Publishing Pro provides an onscreen outline of where the headlines, articles and graphics will appear on the page.

Figure 4 is a partial Publishing Pro page. I entered the headline in the largest type and the two sub-heads in the smallest type. I then set the first copy block at 39 columns wide and 42 lines long.

PaperClip seems to be the best word processor to use with Publishing Pro. Matching PaperClip column margins with Publishing Pro margins provides an exact count of lines needed for the column.

Once completed, a Publishing Pro page may be saved to disk as a News Station page of eight plates, or it can be printed. Saving the page in plate form permits some final editing.

Preparing a page with Publishing Pro requires extensive planning to properly locate the headlines, text and graphics at the correct coordinates. I might use Publishing Pro to create a page with one headline and text across the full page—or if I'm really pressed for time. News Station, though, is my first choice, especially with the enhancements of News Station Companion.

News Station advertises that "what you see on screen is what you get on paper." And in working on page layout, that's the most important feature for me. ■

NEWS STATION
NEWS STATION COMPANION
PUBLISHING PRO ($39.95)
Reeve Software
29W150 Old Farm Lane
Warrenville, IL 60555
(312) 393-2317
$29.95, 48K disk
CIRCLE 162 ON READER SERVICE CARD

PRINT SHOP POWER USERS
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(2, 5, 7, 10 and 12, in this case). Print, and you have your mixed graphics.

When adding a border and/or text on the first print pass, don't forget to back up to the border and text entry screens and delete them. Otherwise any misalignment of paper will likely produce unwanted effects on the second print pass.

With some planning (and patience), you could put as many as 13 small or five medium graphics on a single page. Other unusual effects can be achieved by using a different font for each print pass.

In *Figure 3,* mirrored graphics were created with the Graphic Editor +. While in the Graphic Editor, load a graphic and save it to another disk, but denote it as (L)eft or (R)ight. Then on the graphic editing screen, flip the graphic horizontally and save it as the opposite version. You can also use a regular graphic along with an inverse (negative) instead of paired left and right graphics.

GRAPHICS AND FONTS

Figure 5 shows an uppercase letter followed by text. While this is similar to the banner in *Figure 2*, it's harder to do. You've probably placed a graphic or two, typed in some text, and *bang*—a collision, right?

Combining a graphic with a font is just as tricky. I only do this in the sign mode, since it requires several practice runs to line up the graphic with the font. (See *Figure 5.*) When you mix text and graphics on the same page, you have only a rough idea where to start the text. Sometimes this problem is complicated by proportional spacing.

Trying to align a graphic with text requires going through the program several times. The results can be gratifying, particularly when you want something special or if you're making a master copy for photocopying. I always use position 1 from the custom layout entry screen, usually with a small graphic. But it also works with a medium graphic.

At the text entry screen, type in the first two lines of text and print them to see how well they match the graphic. Then press [RETURN] to reenter the program and insert side 1. Press [ESCAPE] to return to the text screen and make the necessary adjustments in the text.

Using the second line of text as a guide, adjust the first line of text. Use spaces to move the text towards the left and nearer to the graphic. If the text overruns the graphic, you will have to erase the line and start over. Then do a second trial printout and, if necessary, repeat the procedure until the text and graphic are brought together. Once you're satisfied, return to the text screen and complete the rest of the text.

Mixing text with a large graphic might produce "busy," unreadable results. Instead of printing the text and graphic together, I take an old, faded ribbon (or a colored ribbon) and print the graphic on the first pass. Then I switch ribbons and print the text on the second print pass. This works well with cartridge-type ribbons—the text stands out and doesn't compete with the graphic.

You'll get the best results with 15-pound or 20-pound paper. Making multiple passes on lightweight paper is possible, but much harder to bring off. Tractor feed is a must, unless your printer only uses single sheets. ■

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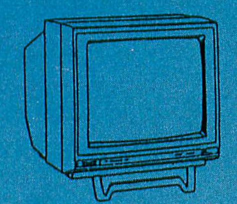
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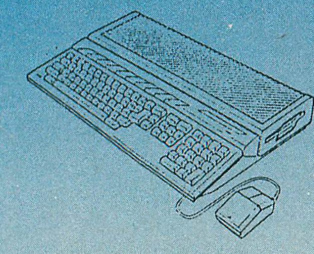
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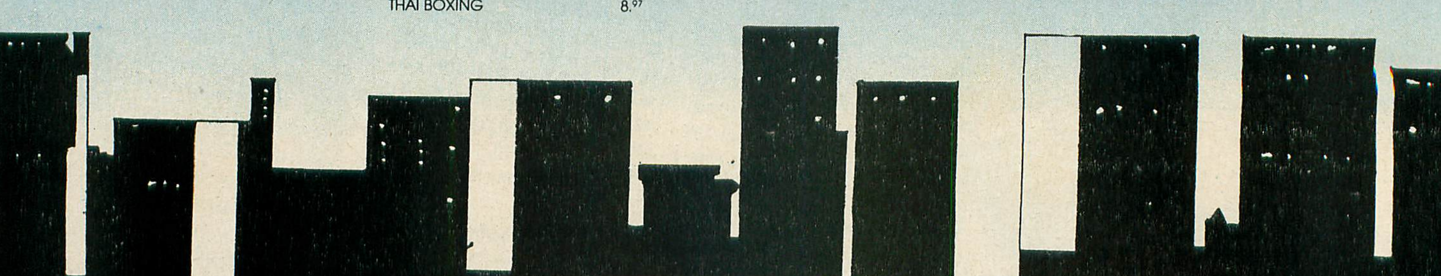
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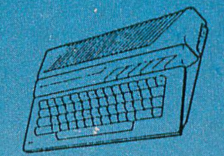
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TurboBase Business Software

IBM power without the price

by STEPHEN ROQUEMORE

The MicroMod **TurboBase** Integrated Business Application is the ambitious successor to MicroMiser's previous versions of MicroMod small-business software. (Version 2.4 was reviewed in the July, 1986 issue of **Antic**.)

TurboBase takes full advantage of the latest third-party power enhancements for the 8-bit Atari. Specifically, it works with the 1-megabyte RAMdisk capability of ICD's **Multi I/O Board** ($349.95) and speedy SpartaDOS 3.2. (These breakthrough ICD products were reviewed in the April, 1987 **Antic**.)

TurboBase also works under standard Atari DOS 2.5, or DOS XL from OSS, but TurboBase is such a powerful software system that it really needs the extra hardware muscle in order to show its full potential. This program is not primarily for casual home users, but for business owners seeking a central software system to handle all their financial and administrative data.

MicroMiser has made it clear that TurboBase is intended to compete with the best of IBM PC business applications. In fact, MicroMiser ideally would like to recruit a network of "value-added resellers" to market and support beefed-up Atari/ICD systems running TurboBase—at savings of about $20,000 over competitive PC packages.

TurboBase is actually an integrated software system with multiple applications that work together. The Directory is where you set up all the entries for customer and vendor addresses, phone numbers and miscellaneous data. Dated Records sets up accounts for the receivables and payables. There is a word processor—with a spelling checker, no less—for creating form letters and other business documents.

Other programs track inventory, process invoices and statements, or handle the payroll calculations. A flexible report generator prints your own specialized report layouts.

I really can't think of any feature associated with running a business that has been left out—except for the *huge* prices charged for comparable software on MS-DOS computers.

LEARNING TURBOBASE

The TurboBase Manual is over four inches thick. It is so complete that you could spend several weeks just mastering it. Thoughtfully, MicroMiser has provided a quicker way to get started—the Quick Course and Cookbook.

The Quick Course is a small spiral-bound manual that contains step-by-step instructions showing you how to use most of the features of the program in minimum time. It first tells you the goals of each "lesson," then tells you exactly what to type in and what you should expect to see on the screen.

MicroMiser's idea is that the Quick course will be your "programmed" teacher. You are supposed to take this course in several two-hour sessions, as though you were attending a workshop with an expensive consultant. And if you get stuck, the company says it will provide as much telephone support as you need to get started.

MicroMiser does indeed live up to its promises. I have an unusual disk set-up that doesn't lend itself to running either SpartaDOS or DOS 2.5. I phoned for assistance and MicroMiser president Steve Bolduc was very helpful. Within a few days I received updated double-density DOS XL disks.

When I sat down to start the Quick Course, I found that it was easy to follow and very quickly communicated an understanding of TurboBase functions. It also provided some of the intuitive feel you get from using a program for a long time. You always started from something simple and built on it, so the logical structure soon became apparent. Eventually you could successfully guess what would come next.

Many of the Quick Course lessons involve printing what you have just done. At key points you compare your printout with the example in the manual. If there are differences, you re-do the previous steps until you get a match, or call MicroMiser for help.

The printing was . . .slow. . . on my DOS XL version. The manual discusses this issue thoroughly and recommends the Multi I/O Board with SpartaDOS as the best solution.

The Quick Course requires about 12-14 hours to complete, including two tests at the end. Yes, there *is* a final test. You can send it in to be graded and they will recommend any necessary brush-up areas. Now, this is customer support!

When you are finished with the Quick Course, you will be familiar enough with the main Manual to find most of the answers you need for setting up your own specialized configuration.

Sometimes the writing tone in the Manual and the Quick Course seemed more suitable for a casual home user than for a business professional. I was occasionally left slightly confused about what type of user they were spe-

continued on next page

TURBOBASE

continued from previous page

cifically speaking to. But this is indeed a minor point—the excellence of TurboBase software and documentation for its stated purpose soon becomes self-evident.

Ambitious and astute home users could also make good use of TurboBase. The Dated Records section will construct just about any database application you could want from older software like SynFile+ or DataPerfect. Even just the Directory program could be useful in general database applications.

I recommend a serious look at TurboBase for any small-business owner who has been resisting the pressure to convert to a PC clone and run MS-DOS applications. TurboBase on an Atari with the Multi I/O will deliver comparable power at a fraction of the cost. ■

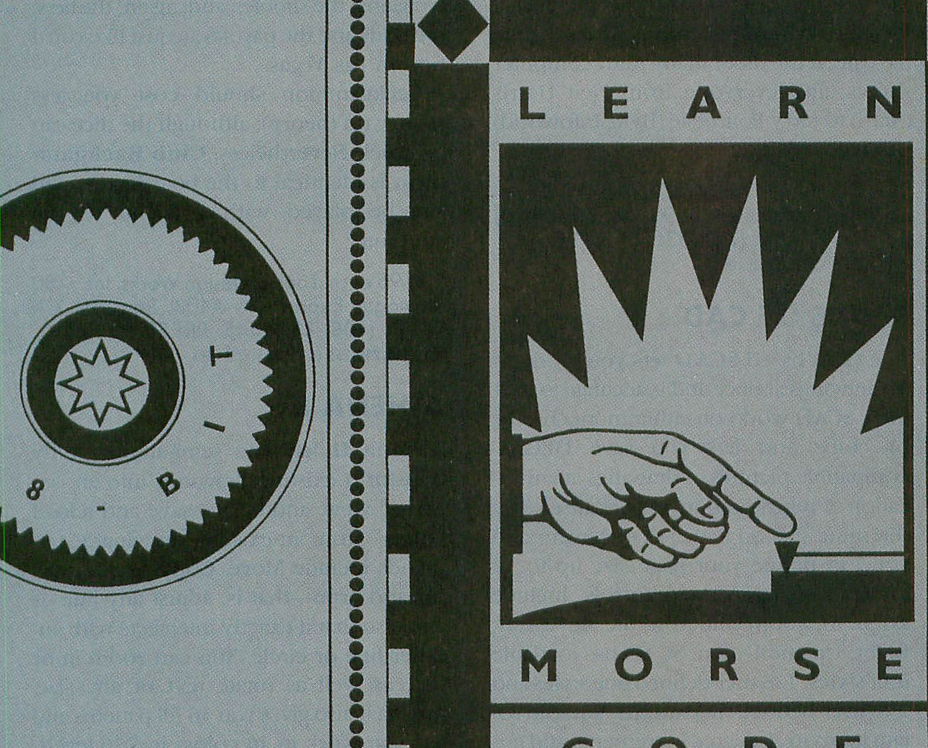
TURBOBASE
MicroMiser Software, Inc.
1635-A Holden Avenue
Orlando, FL 32809
(305) 857-6014
$159.95, 48K disk

CIRCLE 207 ON READER SERVICE CARD





ANTIC DECEMBER 1987







CONTENTS

ST Disk Subscribers: For instructions on how to transfer **Antic** ST programs to 3½-inch disk, see ST Help File on Side B of monthly disk. ST programs from previous issues are available in 3½-inch format from The Catalog.

ST New Products

By Gregg Pearlman, Antic Assistant Editor

P'S AND Q'S

Plutos, Mindscape's new space shoot-em-up, combines smooth-scrolling, state-of-the-art graphics and sound into the ultimate arcade adventure as you try to destroy the enemy mother ship's defenses.

Q-Ball is unlike any pool or billiards simulation you've ever seen. Sure, you've got to sink the balls into the provided pockets—but it's not so easy when you're playing inside a cube instead of on a table. This 3-D-like game gives you a whopping 262,144 possible viewing angles. (If you use them all, how could you ever miss a shot?) Also, if the 3-D perspective is too confusing, you can choose the one-plane (flat table) mode until you become acclimated.

$29.95 each. Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062. (800) 221-9884. In Illinois, (800) 942-7315. PRESS. PRESS.
CIRCLE 251,252 ON READER SERVICE CARD

SOLID GOLD

Activision's popular **Hacker** and **Little Computer People** have gone gold—and the reward is great savings. Hacker simulates the accidental break-in of a private computer system as you search for classified information and shmooze with suspicious characters. Little Computer People lets you see inside a house just big enough to fit into your monitor as you communicate with and entertain the little critters therein.

$24.95 each. Activision, Inc., 2350 Bayshore Parkway, Mountain View, CA 94043. (415) 960-0410. PRESS.
CIRCLE 255,256 ON READER SERVICE CARD

MASTERCAD

Why build data matrices or struggle with strange user interfaces? Create exact 2-D and 3-D graphics quickly and easily with the mouse-driven **MasterCAD**. Generate spun objects from two dimensions and project them into 3-D; move, copy, rotate or flip any item horizontally or vertically; make rotational and multiple copies—and define your own relationship between each copy; observe your images from various viewpoints.

$199.95, monochrome monitor and one megabyte required. INDI C.A., Calle Madrid, Qta. El Pilar, Las Mercedes, Caracas, Venezuela. 58-2-92-5959 or 58-2-91-1375. PRESS.
CIRCLE 224 ON READER SERVICE CARD

HAVE A NICE DAY

Up to 16 people, each with an ST and MIDI cable, can play **MIDI Maze**, written by the talented programmers at Xanth. MIDI Maze is a first-person perspective game, where you zip down corridors and try to blow away every enemy Happy Face you encounter—either computer opponents or the other players. Each player has his or her own perspective, and you can play every man for himself, with teams or as a gang descending on a specific player. Pre-release demonstrations of this game have been the hit of many Atari computer shows, and everyone from Neil Harris (Atari) to Jerry Pournelle (Byte, Infoworld) has enjoyed it.

$39.95. Hybrid Arts, Inc., 11920 W. Olympic Blvd, Los Angeles, CA 90064. Voice: (213) 826-3777; BBS: (213) 826-4288. BETA.
CIRCLE 257 ON READER SERVICE CARD

SCADS OF CAD

The GEM-based **SCAD** lets you work on 16 drawings at once and is accurate to .001 inch. SCAD works on either monochrome or color and lets you save DEGAS-compatible pictures of drawings at any location or magnification. Images are exactly the same size on paper as onscreen, and you can define your page size up to 32 inches square. View controls include Zoom In, Zoom Out, Absolute Move, Left, Right, Up and Down. SCAD has loadable font styles, 128 user-defined line styles and 256 user-defined fill patterns. You can rotate items in .1-degree increments and enlarge or reduce them in .1% increments.

$99.95. Xetec, Inc., 2804 Arnold Road, Salina, KS 67401. (913) 827-0685. PRESS.
CIRCLE 245 ON READER SERVICE CARD

CAPTAIN, WE'RE BEING SCANNED

The DEGAS and NEOchrome-compatible **IMG SCAN** image scanner turns your ST and any graphics-capable printer into a high-resolution image scanner. A small light pipe attached to the print head captures 256 gray levels, works in all screen resolutions and allows nine levels of magnification or reduction. Scan any page, photo, copy, etc. that will fit into your printer.

$59.95. Seymor-Radix, P.O. Box 166055, Irving, TX 75016. PRESS.
CIRCLE 258 ON READER SERVICE CARD

LUCK BE A LADY

Vegas Gambler puts slot machines, blackjack, video poker and roulette on your ST. All four games feature fast action and colorful graphics, and they all hold true to actual blackjack bets, rules and payoffs in Las Vegas casinos.

Vegas Craps lets you toss your dice across the ST's felt table and watch with horror as the electronic croupier scoops up the money you lose. You can go with or against the shooter, and, again, the bets, the odds and the payoffs are just like you'd find in Las Vegas.

Backgammon should cost you less money (in theory), although the dice can be cruel. Nevertheless, **Club Backgammon** is identical to the board game and can be played with a friend or the computer.

$34.95 each. Logical Design Works, Inc., 780 Montague Expressway #403, San Jose, CA 95131. (408) 435-1445. PRESS.
CIRCLE 248,249,255 ON READER SERVICE CARD

ATHENA II

Athena II lets you semi-automatically transform existing drawings into an isometric view, and create, save and reload "parts" from an existing drawing. Commands include Move, Copy, Rotate, Mirror and Trim—that is, adjust any line or circle so that it exactly intersects with another line or circle. You can zoom in or out, as well as rotate text of any size. Athena II also gives you 36 fill patterns and lets you work in 16 colors in 256 levels. And the 300-page manual will clear up whatever you don't understand.

$99.95, requires one megabyte RAM. Iliad Software, Inc. 495 West 920 North, Orem, UT 84057. (801) 226-3270. PRESS.
CIRCLE 246 ON READER SERVICE CARD

*New ST product notices are compiled from information provided by the products' manufacturers. **Antic** assumes no responsibility for the accuracy of these notices or the performance of the product. Each mention is followed by a code word indicating that, at press time, **Antic** had seen a FINAL marketable version, near-final BETA, earlier ALPHA, incomplete DEMO, or PRESS release.*

ST Product News

ST Reviews

ST WARS

Miles Computing
7741 Alabama Ave., Suite 2
Canoga Park, CA 91304
(818) 341-1411
$39.95

CIRCLE 226 ON READER SERVICE CARD

Reviewed by David Plotkin

ST Wars is a fast-action, first-person space arcade game that uses digitized sound, vector-like graphics and multiple scenarios for an interesting gaming experience.

In ST Wars, your mission is to fight the galactic "Tyranny." You pilot a fighter ship armed with a high-powered laser, heat-seeking and camera-guided missiles. You have a limited supply of these missiles, so use them wisely. A panel in your cockpit shows altitude, compass bearing (in space?), energy levels and your laser temperature—don't let it get too hot. You use up energy while you fly, if you're hit or when you run into something. If you run out of energy, the game is over.

Your first challenge is climbing aboard your ship; since ST Wars is played entirely from the first-person perspective, controlling your alter-ego as he stumbles into hangar walls takes some getting used to. After you're situated in the cockpit, you're catapulted into your first battle, where you must fend off attacks of brown duoplanar fighters and the green attack ship. You also must avoid or destroy the numerous asteroids in the area. There is a recharge station to get energy, and when you get tired of this, simply press the "H" key to go into hyperspace and the next scenario.

As you come out of hyperspace, you will be attacked by blue duoplanar fighters, and if you defend yourself successfully your ultimate objective will come into view: a "Starbase," looking suspiciously like the Death Star of *Star Wars* fame. You zoom down to its surface, which is heavily defended by walkers, towers, tanks and duoplanar fighters. You can fly down a trench to get extra energy, and then fly through several other trenches leading down into the interior of the base, past both moving and stationary laser gates. Finally, if you make it this far, you blast the reactor and navigate your way out, just in time to watch the base explode behind you.

You control the fighter through either the joystick or mouse; I recommend the latter. There are also keyboard keys for launching missiles, getting alternate camera views out of your cockpit and controlling your speed. The left mouse button and joystick button control the laser; the camera-guided missile (which beams a picture back to your ship screen) can be launched through the keyboard or the right mouse button.

The graphics, animation and sound in ST Wars are quite good. The animation tends to bog down if there are more than a few objects in sight, and the response of your gunsight lags, but the effect does not seriously detract from the game. The "down-the-trench" sequences are outstanding, although some of the surface targets are very hard to hit. (Often a near-miss is good enough to do the job, making the game less frustrating.) The manual and quick reference card are entertaining and informative.

There are a few minor bugs with ST Wars. Often, after an explosion, the remnants of the blast mess up your instrument panel until the screen is redrawn, which may be a while. Also, I blasted the reactor with a camera-guided missile by guiding it through the obstacles while I was still outside on the surface of the Starbase—and found myself in the reactor room, never having negotiated the laser gates! The Starbase did not explode behind me, though.

Overall, ST Wars is well-done. It's more playable than other games of its genre, allowing the novice to survive longer, but in its upper levels, still challenging enough to satisfy experienced "spacers."

1ST MATH
MEMORY MASTER
MY LETTERS, NUMBERS AND WORDS

by Elmer Larsen
Stone & Associates
7910 Ivanhoe Avenue, Suite 319
La Jolla, CA 92037
1-800-621-0852
$39.95 each

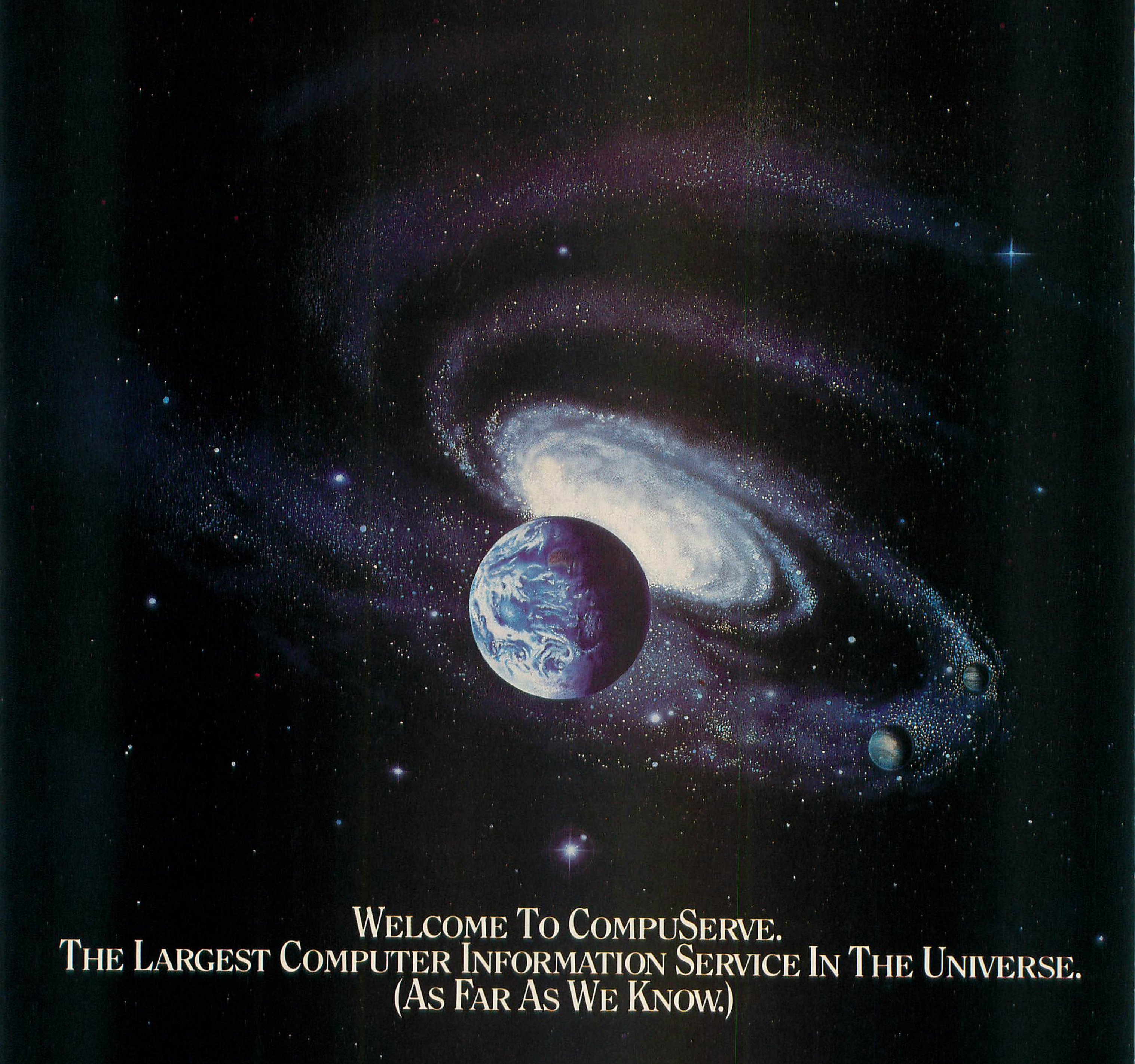
CIRCLE 226,227,228 ON READER SERVICE CARD

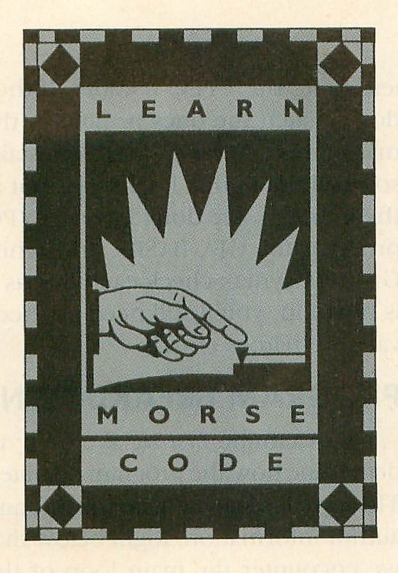
Reviewed by Sol Guber

Stone and Associates has brought out three excellent children's programs for the Atari ST—**1st Math, Memory Master and My Letters, Numbers and Words**. These programs teach mathematics, memory and visual skills, and letters and numbers, and they reward correct answers with cute animation and music.

All three programs use large letters, bright colors, animation and a mouse-based input system. Each program comes with several teaching sections which can be adjusted to the skill of your child. They also come with a short manual that shows how to load the program into the computer, but has few additional instructions. How-

continued on page 59


WELCOME TO COMPUSERVE.
THE LARGEST COMPUTER INFORMATION SERVICE IN THE UNIVERSE.
(AS FAR AS WE KNOW.)



Morse Code Trainer

For your • — — • — • • • 8-bit and ST*

* *(Atari)*

By PATRICK BASS *ST Resource Technical Editor*

Anachronism.

In today's world of fast personal computers and ASCII standards, Morse code is about as hip as hula-hoops, mood rings or the Edsel. Unless you inhabit the short-wave radio airways it's possible you may never hear Morse code, unless it's the famous "SOS". Since the FCC has just recently allowed the use of radio-modems, and dropped the Morse requirement for a HAM license, Morse code may slip further into the mists of obscurity.

Unless *you* help to keep it alive. Learning Morse code is not that difficult, and comes in handy in the most extrordinary ways. For example, if you ever learn to fly, you'll find the radio navigation aid beacons (VOR/VORTAC) beep their names using Morse Code.

THE MILITARY WAY

Okay, so what's the best way to learn Morse code? I once worked with a fellow named John Alexander, who had been a radioman during World War II. He described how he learned Morse Code in the military. "Look kid, there're three ways to do things—the right way, the wrong way and the Army way," he said. "This is how they taught us. You don't listen for *dabs* or *dits*, you listen for the *sound* of the letter. Each one has its own unique tempo and sound." I looked confused. His cigar travelled from one side of his mouth to the other. "You see," he continued, "They put us in this room, where day in and day out we listened to a recording of a Morse code signal over and over, and read the text that came with it."

And that's how you'll learn Morse code with your Atari computer. This month we present two programs (an 8-bit version and an ST version) that will convert any text file you type in to Morse code, and play it back for you while you read the text. The Atari computer is a tireless teacher, with a perfectly repeatable "fist" to teach you Morse code. Incidentally, **Antic** has already published a program which will convert from Morse Code to ASCII text. Read "Morse Code Receiver" in the November 1985 issue of **Antic**.

UP AND RUNNING

For the Atari 8-bit computers, you'll find MORSE8.BAS on your Antic

continued on next page

Monthly Disk. You may RUN this file from the menu, or load it using Atari BASIC and examine or change the code. If you have an Atari ST, you'll find the source code to MORSE16.BAS in GFA BASIC on side B of the Antic Monthly Disk, along with MORSE16.PRG, an executable version which does *not* require GFA BASIC to run. You need to transfer these files over to your Atari ST using Linkline. The directions for using Linkline are in the HELP file on side B of your Antic Monthly Disk. When MORSE16.PRG is on your ST disk, simply double-click on it. You'll need to create a simple ASCII text file containing the letters, words, or phrases you want converted into Morse code. When the program gets up and running, you'll select the text file to sound out.

If you don't have the disk, you'll need to type in the programs. *Listing 1* is the Atari 8-bit version of Morse Master. *Listing 2* is the Atari ST version. Type in the version for your particular Atari computer. If you type in the Atari 8-bit version, pay close attention to the TYPO II codes. If they don't match the ones printed in the magazine, you may have a mistake somewhere in that line. Sorry, but at the moment, we don't have a TYPO program for GFA BASIC, and while GFA *will* syntax-check each line as it is typed in, you'll still need to check variable names closely.

PROGRAM BREAKDOWN

Let's examine *Listing 2* closely to determine how the program operates. The top four lines contain the title and author information. Right below that we encounter the main loop of the program. Here, we **Initialize** the program, then **Select** a **file**, and if the file actually exists, we **Emit** the **file**. When the entire file has been sounded out, an alert box will pop up, asking if you want to listen to another file. If you don't, click on [No], and the program will drop back to the desktop.

Initialize

First, save space for the Morse code translations which are saved inside **Data** statements. Next, we need to create a place to hold our text file, so **Dim** a 100K text buffer, and find out where in memory it is. Below that, read all the Morse translation strings and place them inside an array, so we can index to them directly according to the value of the letter we want to reproduce. Next, test to see if we're in low resolution, and if we are, present an alert box and ask to be changed to medium resolution, otherwise assign various small variables their initial values, and return.

Emit_file

In here, we first clear the screen, then remind you which file is being read, and remind you to press any key for an early exit. Next, we advance character by character through the text buffer, sounding out every alphabetic character there is, skipping over punctuation and numbers. Eventually, we'll either reach the end of the file, or press a mouse button or any key, and this routine will end, and return.

Emit_character

This is the routine which actually creates the Morse code sound. According to the value of the character passed to it, this routine will index to the proper Morse code translation string, and advance through it, sounding out the individual dots and dashes for that particular character.

Select_file

Here is where we select which file to access and read in. When this routine is executed, the familiar File Selector Box is presented onscreen, and waits while you select a filename. If the filename you select actually does exist on the disk, it is read into the text buffer created earlier, and the routine exits. Otherwise, you'll be warned no such file was found, and be given the chance to select another.

CARE AND FEEDING

The perfect way for you to use Morse Code Trainer would be to type in your example text, sit back and listen carefully. With luck and some patience, you'll be "ditting" and "dahhing" in no time. ■

Listing on page 76

continued from page 55
ever, the programs are so easy to use that children really need no instructions.

1st Math is designed to teach addition and subtraction skills to children ages five through eight. There are three main sections to this program. In the first, the program presents a simple equation, such as 3+4=?. You must type in the correct answer. Answer correctly and a new problem is given; answer incorrectly and nothing happens; no sound or beep will occur. If you type in the wrong answer three times, the correct answer is shown in outlined form. After ten questions, a short congratulatory animation sequence is shown on the screen. You can practice addition and subtraction all the way up to 99.

1st Math also has two other games. First is the Construction Set, where you must solve a number of equations to generate a screen picture (a bird sitting on a clothesline, for example). As you solve the equations, other parts of a picture are revealed. When you've solved the proper number of problems, the picture becomes animated (in the above example, the bird flies away). The last game is called Freight Depot. In it, you use a crane to pick the correct number of an equation and drop it into a trap door, where a forklift then loads the number on a truck. After five answers, the truck drives off.

Memory Master contains four games to help develop memory skills, sharpen pattern, color and shape recognition and expand a child's basic vocabulary. It's written for children ages two to six but older children can also profit from the games. The first game is called Same. At the top of the screen is an object and underneath are four choices labeled A, B, C or D. You must either type the letter for the correct answer, or click on the correct box with the mouse. This is more difficult than it sounds, since the four objects are very similar in appearance and sometimes have only subtle differences between them. If you press the wrong answer, there's no response from the computer.

Two other games in Memory Master use the same structure as Same. In the game Words, a word is shown on the top of the screen, with several objects below. You must pick the object corresponding to the word. This teaches reading and word recognition skills. The final game is called Belong. An object (say, a hand) is shown on your screen, and you must pick a similar object (a glove); one in the same family or with a similar relationship. This game teaches analytical skills. The last game is a simple matching game, where you must match pairs of objects.

The last program is **My Letters, Numbers and Words** and is designed for children ages two to six. It contains three games, the first of which teaches typing skills. A letter is shown on the screen, along with what finger you use to press that letter. The second game shows a number on the screen, and requires you to spell out the name of that number. If a 6 is shown, the program waits until "six" is typed and then six objects are shown on the screen. Although these games are interesting, both seem overly complicated for the suggested age group.

The last game requires you to spell out the name of an object shown on your screen. When you spell it correctly, the object becomes animated. The words range in difficulty from "hat" to "octopus" to "volcano," although there are only twenty-six different words in this part of the program. In all of these games, you can adjust the skill level so that both capital and lowercase letters can be shown. Again, there is no reaction from the program if a wrong letter is typed in, although hints are given liberally.

Overall, these are fine programs for young children. There's a certain amount of whimsy in the animation that is very attractive. For instance, in the 1st Math subtraction game, if you take away four bees from eight bees, once you type the correct number, four bees fly off the screen. The colors used in the games are bold but not overwhelming, and the sound effects and animation are professionally done.

Overall, these programs are fun. They're easy for young children to use, and with their cute rewards and animation, children will enjoy playing with them even after they've solved all the program puzzles.

SHANGHAI

Activision, Inc.
P.O. Box 7287
Mountain View, CA 94039
(415) 940-6044
$39.95

CIRCLE **225** ON READER SERVICE CARD

Review by David Plotkin

Shanghai is a tremendously-addicting strategy board game that will test your concentration. It's based on the ancient Chinese game Mah-Jongg, and once you've played it, you'll understand why that game has remained popular all these centuries.

Shanghai is played with 144 tiles, each with a design and/or a number on it. The tiles are arranged into a five-layer pattern known as the "Dragon." The object is to remove the tiles from the board by matching up identical tile pairs, until all of them are gone. The only exception to the "identical pairs" rule is that any two flower or season tiles may be paired. What's tricky is that only tiles that can be slid out of the dragon *to the left or right* and do *not* have a tile on top of them can be paired and removed. This limitation makes it imperative to be able to think several moves ahead!

You can play Shanghai solo, with

continued on next page

another person, or in a timed competition. I found it most enjoyable to play alone, with no pressure. The graphics are good, although it's hard to tell which level a tile is on, since the level is distinguished only by the color of the narrow border around the outside of the tile. Each new game is generated randomly, and there's a nice surprise at the end of the game if you solve it. My only complaint is that, according to Activision, sometimes a board cannot be solved—if you run out of moves with tiles left on the board, you won't know if you made a mistake or if the deck was stacked from the beginning (so to speak). However, you can save a board to disk to try it again, and there are numerous boards on the disk which are guaranteed solvable.

The game is very easy to play: just point and click on the tile you want,



then double-click on the other tile to remove them both. Messages will appear if your move was illegal, and your tiles won't be removed. The mouse and drop-down menus add to the ease of use. Shanghai also includes various help options. You can request the ST to show you all the available moves, back up a move if you change your mind and show you what is hiding underneath a particular tile. (Your score will suffer if you ask for help, however.)

What's so addicting about Shanghai is the great feeling of accomplishment you get when you solve the puzzle. It's unlike any other game I have played, and I highly recommend it.

HARDBALL

Accolade Software
20813 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 446-5757
$39.95

CIRCLE **261** ON READER SERVICE CARD

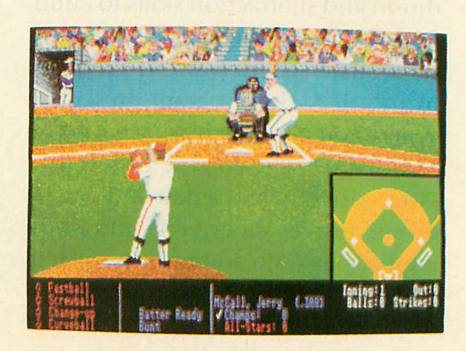
Reviewed by Sol Guber

Hardball is a baseball simulation for one or two players. It has excellent graphics (it mixes medium resolution at the bottom of the screen with low resolution at the top) and a very good mouse and joystick interface.

The animation is very realistic: the catcher moves his mitt to catch the ball and his arm moves when he throws it back—he even flexes his knees. The trajectory of the pitch on the screen depends on the type of pitch thrown: fastball, curve, sinker, etc. The movement of the pitcher is realistic, too: he kicks, winds up, moves his head and throws the ball—all very smoothly. The batter movement is also very good.

Game play is excellent. When your team is out in the field, your viewpoint is from about ten feet behind the pitcher. Each pitcher throws four different pitches, (the types depend on the individual pitcher) and you can choose a location for the pitch. Then the pitcher winds up and throws. If the batter swings and connects, you'll hear the crack of the ball against the wood and see the ball move out. Your point of view is now from behind home plate, and you see where the ball is headed. Use your mouse to move the flashing fielder toward the ball: The playability is such that you need only to get close to catch it. Then you can throw the ball to another fielder.

When you're batting, you have a number of choices. For instance, there's a grid of nine spots around the plate where you can swing your bat, and you try to bunt or steal a base. When the pitcher throws the ball, press the mouse or joystick button to swing at it. If you hit it, the bottom of the screen shows the batter running



to first base. (You can also try for extra-base hits.) Hardball comes with a 20-page manual that explains many of the options.

The essence of Hardball is strategy; each team must make several decisions. You can move the infield in or back, or shift the outfielders. Teams can have several relief pitchers, but if you use them too early (or for too long), they'll wear themselves out and throw poorer pitches.

You can use either the joystick or the mouse to play Hardball, and you can compete against either another player or the computer. The computer plays fairly well; it seems designed so that it doesn't overwhelm the human player. You can strike the batter out, as well as get in a double play if you practice hard enough. You can even hit a home run against the computer player.

Hardball succeeds in giving you the flavor of baseball—the pitcher/batter confrontation. It's slow-moving, but once the ball is hit, you must think quickly. The graphics and playability are excellent, and your mouse control seems almost intuitive after the first game. (However, one drawback is that you can't save an unfinished game to disk. You must play to the end.) Still, the graphics and the user interface make this is one of the best baseball games around. ■

SOFTWARE LIBRARY

DISK SUBSCRIBERS: Programs for 8-bit Atari computers can be used immediately. Just follow instructions in the accompanying magazine articles. ST Owners: See monthly disk's ST Help File for instructions on how to transfer programs to 3-1/2 inch disk.

DOS COMPATIBILITY: All 8-bit programs published by **Antic** are tested to work with Atari Disk Operating System (DOS) 2.0S and 2.5—*not* with the incompatible DOS 3.0. DOS 2.0S is available on each Antic Monthly Disk. Copy the DOS.SYS and DUP.SYS files.

TYPING SPECIAL ATARI CHARACTERS

Antic printed program listings leave a small space between each Atari Special Character for easier reading. Immediately below you will see the way **Antic** prints all the standard Atari letters and numbers, in upper and lower case, in normal and inverse video.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
abcdefghijklmnopqrstuvwxyz
0123456789 0123456789

The Atari Special Characters and the keys you must type in order to get them are shown in the two boxes below.

NORMAL VIDEO

FOR THIS	TYPE THIS	FOR THIS	TYPE THIS
	CTRL ,		CTRL S
	CTRL A		CTRL T
	CTRL B		CTRL U
	CTRL C		CTRL V
	CTRL D		CTRL W
	CTRL E		CTRL X
	CTRL F		CTRL Y
	CTRL G		CTRL Z
	CTRL H		ESC ESC
	CTRL I		ESC CTRL −
	CTRL J		ESC CTRL =
	CTRL K		ESC CTRL +
	CTRL L		ESC CTRL *
	CTRL M		CTRL .
	CTRL N		CTRL ;
	CTRL O		SHIFT =
	CTRL P		ESC SHIFT CLEAR
	CTRL Q		ESC DELETE
	CTRL R		ESC TAB

INVERSE VIDEO

FOR THIS	TYPE THIS	FOR THIS	TYPE THIS
	Λ CTRL ,		CTRL X
	Λ CTRL A		CTRL Y
	Λ CTRL B		CTRL Z
	Λ CTRL C		ESC SHIFT DELETE
	Λ CTRL D		ESC SHIFT INSERT
	Λ CTRL E		ESC CTRL TAB
	Λ CTRL F		ESC SHIFT TAB
	Λ CTRL G		Λ CTRL .
	Λ CTRL H		Λ CTRL ;
	Λ CTRL I		Λ SHIFT =
	Λ CTRL J		ESC CTRL 2
	Λ CTRL K		ESC CTRL DELETE
	Λ CTRL L		ESC CTRL INSERT
	Λ CTRL M		
	Λ CTRL N		
	Λ CTRL O		
	Λ CTRL P		
	Λ CTRL Q		
	Λ CTRL R		
	Λ CTRL S		
	Λ CTRL T		
	Λ CTRL U		
	Λ CTRL V		
	Λ CTRL W		

Whenever the CONTROL key (CTRL on the 400/800) or SHIFT key is used, *hold it down* while you press the next key. Whenever the ESC key is pressed, *release* it before you type the next key.

Turn on inverse video by pressing the Reverse Video Mode Key . Turn it off by pressing it a second time. (On the 400/800, use the Atari Logo Key Λ instead.)

Among the most common program typing mistakes are switching certain capital letters with their lower-case counterparts—you need to look especially carefully at P, X, O and 0 (zero).

Some of Atari Special Characters are not easy to tell apart from standard alpha-numeric characters. Usually the Special Characters will be boxed. Compare the two sets of characters below:

SPECIAL			STANDARD		
		CTRL F			/
		CTRL G			SHIFT +
		CTRL N			SHIFT −
		CTRL R			−
		CTRL S			+

HOW TO USE TYPO II (8-BIT)

TYPO II automatically proofreads **Antic**'s type-in BASIC listings for 8-bit Atari computers. It finds the exact line where you made a program typing mistake.

Type in TYPO II and SAVE a copy to disk or cassette. Now type GOTO 32000. When you see the instruction on the screen, type in a single program line **without the two-letter TYPO II code** at the left of the line number. Press the [RETURN] key.

Your line will reappear at the bottom of the screen with a two-letter TYPO II code on the left. If this code is not exactly the same as the line code printed in the magazine, you mistyped something in that line.

To call back any line previously typed, type an asterisk [*] followed (without in-between spaces) by the line number, then press [RETURN]. When the complete line appears at the top of the screen, press [RETURN] again. This is also the way you use TYPO II to proofread itself.

To LIST your program, press [BREAK] and type LIST. To return to TYPO II, type GOTO 32000.

To remove TYPO II from your program, type LIST "D:FILENAME",0,31999 [RETURN] (Cassette owners LIST "C:). Type NEW, then ENTER "D:FILENAME"[RETURN](Cassette—ENTER "C:). Your program is now in memory without TYPO II and you can SAVE or LIST it to disk or cassette.

Don't type the TYPO II Codes!

```
WB 32000 REM TYPO II BY ANDY BARTON
VM 32010 REM VER. 1.0 FOR ANTIC MAGAZINE
HS 32020 CLR :DIM LINE$(120):CLOSE #2:CLO
   SE #3
BN 32030 OPEN #2,4,0,"E":OPEN #3,5,0,"E"
YC 32040 ? "K":POSITION 11,1:? "TYPO II "
EM 32050 TRAP 32040:POSITION 2,3:? "Type
   in a program line"
HS 32060 POSITION 1,4:? " ":INPUT #2;LINE
   $:IF LINE$="" THEN POSITION 2,4:LIST B
   :GOTO 32060
XH 32070 IF LINE$(1,1)="*" THEN B=VAL(LIN
   E$(2,LEN(LINE$))):POSITION 2,4:LIST B:
   GOTO 32060
TH 32080 POSITION 2,10:? "CONT"
MF 32090 B=VAL(LINE$):POSITION 1,3:? " ";
NY 32100 POKE 842,13:STOP
CN 32110 POKE 842,12
ET 32120 ? "K":POSITION 11,1:? " TYPO II 
   ":POSITION 2,15:LIST B
CE 32130 C=0:ANS=C
QR 32140 POSITION 2,16:INPUT #3;LINE$:IF
   LINE$="" THEN ? "LINE ";B;" DELETED":G
   OTO 32050
VV 32150 FOR D=1 TO LEN(LINE$):C=C+1:ANS=
   ANS+(C*ASC(LINE$(D,D))):NEXT D
WJ 32160 CODE=INT(ANS/676)
JW 32170 CODE=ANS-(CODE*676)
EH 32180 HCODE=INT(CODE/26)
BH 32190 LCODE=CODE-(HCODE*26)+65
HB 32200 HCODE=HCODE+65
IE 32210 POSITION 0,16:? CHR$(HCODE);CHR$
   (LCODE)
VG 32220 POSITION 2,13:? "If CODE does no
   t match press  RETURN  and edit line a
   bove.":GOTO 32050
```

just right for your print shop cards

P.S. ENVELOPE MAKER

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LISTING 1

Don't type the TYPO II Codes!

```
GH 10 REM THE ENVELOPE MAKER
RC 20 REM BY TODD R. THEDELL
PT 30 REM (c)1987, ANTIC PUBLISHING
OJ 100 REM SETUP
MM 110 DIM CS$(1),RETADR$(24*5),ADRS$(24*
   5),TEMP$(24*5),Q$(25),BL$(24*5),N$(25)
LW 120 DIM LINE$(8),DOT$(1),STAMP$(8),TOP
   $(8)
WP 130 CS$=CHR$(125):REM CLEAR SCREEN
QH 140 BL$=" ":BL$(24*5)=BL$:BL$(2)=BL$
CU 150 TEMP$=BL$
PT 160 LINE$=" . . . ."
VA 180 DOT$="."
RB 190 TOP$=" ------ "
OJ 200 STAMP$="|      |"
SP 210 DATA Antic Magazine
RO 220 DATA 544 Second Street
UI 230 DATA San Francisco, CA 94107
UF 240 GOSUB 270:REM SETBG
HD 250 GOTO 2700:REM MAIN PROGRAM
BP 260 REM SETBG
DV 270 SETCOLOR 2,(RND(0)*16),0:RETURN
RI 280 REM CAPS
ON 290 POKE 702,(PEEK(702)=0)*64:RETURN
EY 300 REM CURSOR
OA 310 POKE 752,(PEEK(752)=0)*1:RETURN
HB 320 REM WELCOME
NX 330 ? CS$
BT 340 POSITION 7,2:POKE 82,7
OQ 350 GOSUB 310:REM ->CURSOR OFF
VM 360 ? "                    ."
SW 370 ? "            .          ."
YQ 380 ? "      .               ."
YC 390 ? " .                      ."
ZM 400 ? "┌────────────────────────┐"
KP 410 ? "|████████████████████████|"
IM 420 ? "|██┌──────────────────┐██|"
ZV 430 ? "|██|██████████████████|██|"
UO 440 ? "|██|███████ THE ██████|██|"
EN 445 ? "|██|████ PRINT SHOP ██|██|"
CK 450 ? "|██|█████ ENVELOPE ███|██|"
EP 460 ? "|██|██████ MAKER █████|██|"
HM 470 ? "|██|█ by Todd Thedell |██|"
AF 480 ? "|██|██████████████████|██|"
KN 490 ? "|██└──────────────────┘██|"
KO 500 ? "|████████████████████████|"
ZV 510 ? "└────────────────────────┘"
ND 520 FOR DE=1 TO 100:NEXT DE
IO 530 POKE 82,2
ZJ 540 RETURN
UG 550 REM CONVERT
XB 560 FOR J=1 TO LEN(Q$)
MF 570 Q$(J,J)=CHR$(ASC(Q$(J,J))+128)
GV 580 NEXT J
ZT 590 RETURN
QV 600 REM SENDER
LN 610 FOR I=0 TO 2
NZ 620 READ Q$
```

continued on next page

```
VJ 630 GOSUB 560
OK 640 RETADR$(I*24+1)=Q$
YF 650 LR=LEN(RETADR$)
BS 660 RETADR$(LR+1)=BL$
GK 670 NEXT I
TH 680 ? CS$:GOSUB 270:REM SETBG
YN 690 LR=LEN(RETADR$)
KA 700 FOR I=0 TO INT(LR/24)-1
JK 710 POSITION 2,I+5
ON 720 ? RETADR$(I*24+1,I*24+24)
GD 730 NEXT I
UW 740 GOSUB 310:REM ->CURSOR ON
FA 750 POSITION 3,2:GOSUB 270:REM SETBG
LR 760 ? "Do you want this return address
   ? Y";:INPUT #16;Q$
AK 770 IF Q$="Y" OR Q$="y" THEN RETURN
TI 780 ? CS$:GOSUB 270:REM SETBG
FZ 790 POSITION 3,2:? "ENTER RETURN ADDRE
   SS"
FJ 800 I=0
FK 810 GOSUB 290:REM LOWERCASE
JM 820 POSITION 2,I+5:? I+1;"->";
QT 830 INPUT #16;Q$
GM 840 IF LEN(Q$)=0 THEN 910
OO 850 RETADR$(I*24+1)=Q$
YJ 860 LR=LEN(RETADR$)
BW 870 RETADR$(LR+1)=BL$
QX 880 I=I+1
ZU 890 IF I>3 THEN 910
PC 900 GOTO 820
HX 910 GOSUB 310:REM CURSOR OFF
HF 920 GOSUB 290:REM UPPERCASE
ZR 930 IF I=0 THEN RETADR$=BL$
RE 940 GOTO 680
XB 950 REM SENT2
HH 960 ? CS$:POSITION 3,2
US 970 GOSUB 270:REM SETBG
UU 980 ? "ENTER THE ADDRESS"
GC 990 I=0
VX 1000 GOSUB 290:REM LOWERCASE
AH 1010 POSITION 14,13+I:? TEMP$(I*24+1,I
   *24+24)
UF 1020 POSITION 11,13+I:? I+1;"->";
BX 1030 INPUT #16;Q$
BP 1040 IF LEN(Q$)=0 THEN 1110
JT 1050 ADRS$(I*24+1)=Q$
MX 1060 LA=LEN(ADRS$)
OO 1070 ADRS$(LA+1)=BL$
LB 1080 I=I+1
YK 1090 IF I>3 THEN 1110
ND 1100 GOTO 1010
XX 1110 GOSUB 290:REM UPPERCASE
RB 1120 IF I=0 THEN ADRS$=BL$
HL 1130 ? CS$
AQ 1140 GOSUB 310:REM CURSOR OFF
MW 1150 LA=LEN(ADRS$)
GF 1160 FOR I=0 TO INT(LA/24)-1
FM 1170 POSITION 16,13+I
TP 1180 ? ADRS$(I*24+1,I*24+24)
FS 1190 NEXT I
WL 1200 POSITION 3,2
IX 1210 GOSUB 310:REM CURSOR ON
DE 1220 ? "Do you want this address? Y";
   :INPUT #16;Q$
AL 1230 IF Q$="N" OR Q$="n" THEN TEMP$=AD
   RS$:GOTO 960
AP 1240 RETURN
ZQ 1250 REM CHECK
HW 1260 ? CS$
ZP 1270 GOSUB 270
XE 1280 GOSUB 310
UC 1290 POSITION 8,5:POKE 82,8:REM L. MAR
   GIN
GD 1300 ? "                           "
MS 1310 ? "   SET PAPER TO THE TOP    "
ZJ 1320 ? "   LINE ON THE PRINTER     "
OI 1330 ? "            &              "
BI 1340 ? "       PRESS <RETURN>      "
YU 1350 ? "                           "
AR 1360 TRAP 1600:REM ERROR CHECK
YP 1370 POKE 82,2:REM L. MARGIN
CS 1380 INPUT #16;Q$
SG 1385 CLOSE #1:OPEN #1,8,0,"P:"
IH 1390 ? CS$
UD 1400 FOR I=0 TO INT(LR/24)-1
DF 1410 POSITION 2,5+I
YG 1420 ? RETADR$(I*24+1,I*24+24)
FG 1430 NEXT I
GF 1440 FOR I=0 TO INT(LA/24)-1
FM 1450 POSITION 16,13+I
TP 1460 ? ADRS$(I*24+1,I*24+24)
FS 1470 NEXT I
GI 1480 GOSUB 1550:REM POSTAGE
XB 1490 POSITION 2,2
VJ 1500 ? "       PRINTING THIS ENVELOPE 
      "
DL 1510 POSITION 2,20
PL 1520 ? "   PRESS <BREAK> TO STOP PRINT
   ING  "
AS 1530 RETURN
WS 1540 REM POSTAGE
AS 1550 POSITION 30,5:? "┌───┐"
AD 1560 POSITION 30,6:? "│   │"
AY 1570 POSITION 30,7:? "│   │"
JA 1580 POSITION 30,8:? "└───┘"
BK 1590 RETURN
NP 1600 ? CS$;" -> -> -> ->CHECK YOUR PRI
   NTER!!!!"
RD 1610 ? :? "            TURN ON YOUR PRINTE
   R  ":GOTO 1290
ZY 1620 REM SPACES
ZS 1630 FOR S=1 TO SP
VC 1640 ? #1;" ";
JW 1650 NEXT S
AB 1660 ? #1;DOT$;
BG 1670 RETURN
LS 1680 REM SIDES
QA 1690 SP=8:GOSUB 1620:REM ->SPACES
PW 1700 SP=64:GOSUB 1620:REM ->SPACES
YF 1710 ? #1
AT 1720 RETURN
TG 1730 REM FOLD
DW 1740 FOR F=1 TO 21
EF 1750 ? #1;"  ";DOT$;
EO 1760 NEXT F
BI 1770 RETURN
EG 1780 REM BEGIN
NC 1790 START=W*24+1
QO 1800 FINSH=W*24+24
SK 1810 W=W+1
AV 1820 RETURN
DT 1830 REM BEGIN
FU 1840 GOSUB 1790
GN 1850 ? #1;BL$(1,34);ADRS$(START,FINSH)
BH 1860 RETURN
KB 1870 REM PRINT IT
GR 1880 REM (BEGIN)
JS 1890 REM SETBG
ZI 1900 GOSUB 270
QF 1910 SP=39:GOSUB 1620:? #1
IU 1920 REM
FT 1930 C1=28:C2=5:C3=29
HA 1940 FOR L=2 TO 14 STEP 3
CI 1950 ? #1;"        ";
KG 1960 SP=C1:GOSUB 1620
KT 1970 SP=C2:GOSUB 1620
FZ 1980 REM SP=C3:GOSUB 1620
CX 1990 ? #1:? #1
CP 2000 C1=C1-7
ZT 2010 C2=C2+14
ED 2020 C3=C3-7
GG 2030 NEXT L
IJ 2040 REM
EV 2050 GOSUB 1690
YH 2060 ? #1
IS 2070 REM
SA 2080 ? #1;"   .   .";
YT 2090 GOSUB 1740:? #1;" .   .   .   ."
HZ 2100 REM
RS 2110 ? #1;BL$(1,64);TOP$
TQ 2120 ? #1;BL$(1,12);:W=0:GOSUB 1790:?
   #1;RETADR$(START,FINSH);:N$=RETADR$(ST
   ART,FINSH)
PI 2130 ? #1;BL$(1,64-(12+LEN(N$)));STAMP
   $
IL 2140 REM
IL 2150 SP=8:GOSUB 1620:GOSUB 1790
PU 2160 ? #1;"   ";RETADR$(START,FINSH);
LS 2170 ? #1;BL$(1,64-(12+LEN(N$)));STAMP
   $;" ";DOT$
LX 2180 ? #1;BL$(1,12);:GOSUB 1790:? #1;R
   ETADR$(START,FINSH);:N$=RETADR$(START,
   FINSH)
QA 2190 ? #1;BL$(1,64-(12+LEN(N$)));STAMP
   $
OI 2200 GOSUB 1790:IF RETADR$(START)=BL$(
   START) THEN 2230
BV 2210 ? #1;RETADR$(START);:N$=RETADR$(S
   TART)
UD 2220 ? #1;BL$(1,64-(12+LEN(N$)));:GOTO
    2240
NI 2230 ? #1;BL$(1,64);
WH 2240 ? #1;TOP$
LH 2250 GOSUB 1690:? #1
IT 2260 REM
LK 2270 GOSUB 1690:? #1:? #1
IG 2310 REM
ES 2320 GOSUB 1690
YO 2330 W=0
DG 2340 GOSUB 1840
```

```
YK  2350 ? #1
LS  2360 SP=8:GOSUB 1620:GOSUB 1790:? #1;B
    L$(10,34);ADRS$(START,FINSH);:N$=ADRS$
    (START,FINSH)
OX  2370 ? #1;BL$(36+LEN(N$),74);DOT$:REM
    #36
YT  2380 ? #1
DV  2390 GOSUB 1840
EO  2400 GOSUB 1690
CZ  2410 GOSUB 1840
KZ  2420 GOSUB 1690:? #1:? #1
LC  2430 GOSUB 1690:? #1:? #1
EM  2440 GOSUB 1680
IU  2450 REM
UL  2460 ? #1;" ";LINE$;
DE  2470 GOSUB 1740
CH  2480 ? #1;LINE$
CO  2490 ? #1:? #1
IH  2500 REM
QO  2510 FOR L=51 TO 78 STEP 3
LE  2520 GOSUB 1690:? #1
GT  2540 NEXT L
FF  2550 GOSUB 1690
JT  2560 GOSUB 310:REM CURSOR ON
BF  2570 RETURN
ES  2580 REM MORE???
IH  2590 ? CS$:GOSUB 270
EN  2600 POSITION 5,10
AP  2610 ? "DO YOU WANT TO DO ANOTHER? N■
    ";:INPUT #16;Q$
VU  2620 IF Q$="N" OR Q$="n" THEN 2680
LW  2630 POP
ZS  2640 ? :? "DO YOU WANT THE SAME ADDRE
    SSES? N■";:INPUT #16;Q$
NF  2650 IF Q$="N" OR Q$="n" THEN 2700
ZE  2660 GOTO 2730:REM ? IT AGAIN
FQ  2670 GOSUB 2590:REM SAY WHAT?
AK  2680 ? CS$:RETURN :REM GOODBY.
RB  2690 REM MAIN PROGRAM
RM  2700 GOSUB 330:REM -->WELCOME
NK  2710 GOSUB 610:REM -->SENDER
DJ  2720 GOSUB 960:REM -->SENT2
VG  2730 GOSUB 1260:REM ->CHECK
EW  2740 GOSUB 1900:REM ->PRINTIT
QK  2750 GOSUB 2590:REM ->MORE?
FU  2760 END
```

display print shop icons online

ICONVERTER

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LISTING 1

Don't type the TYPO II Codes!

```
RM  10 REM ICONVERTER
YO  20 REM BY JIM JOHNSON
PT  30 REM (c)1987, ANTIC PUBLISHING
UU  1000 GOSUB 1890:TRAP 1010
XG  1010 GRAPHICS C0:POKE 710,C0:POKE 709,
    C0:POKE 752,C1
XE  1020 POSITION C0,C0:? "█████████████████
    ███████████████████████████████"
YQ  1030 POSITION C0,C1:? "█████████████████
    ███████████████████████████████"
HK  1040 POSITION C0,C2:? "███████████████ █
    ███████████████████████████████"
EH  1050 POSITION C0,C3:? "█████████████████
    █████████████ ██████████████ █"
BD  1060 POSITION C0,C4:? "█████████████████
    ███████████████████████████████"
MM  1070 POSITION C0,C5:? "█████████████████
    ███████████████████████████████"
XF  1080 POSITION C2,10
WA  1090 ? "    A utility to convert PrintS
    hop"
XW  1100 ? "           icons to ATASCII format.
    "
DD  1110 POKE 703,C4
HE  1120 ? "■            Load which icon?"
LG  1130 ? "         ( RETURN for directory)"
KF  1140 ? :POKE 709,C8:POKE 752,C0:INPUT
    GNAME$:POKE 709,C0
NG  1150 IF GNAME$="" THEN GOSUB 2050:GOSU
    B 2130:GOTO 1110
WO  1160 REM GET ICON
NK  1170 X=USR(SRADR,BADR,361,C1,C3):IF B$
    (C1,15)<>"PRINT SHOP:CLK!" THEN GOSUB
    2510:GOTO 1120
PW  1180 FOR SECTR=362 TO 393:X=USR(SRADR,
    BADR,SECTR,C1,C3)
AO  1190 FOR I=C0 TO 96 STEP 32:IF B$(I+C1
    ,I+LEN(GNAME$))=GNAME$ THEN POP :POP :
    GOTO 1220
OZ  1200 NEXT I:NEXT SECTR:GOSUB 2540:GOTO
     1120
SU  1210 GOSUB 2200:GOTO 2300
SR  1220 SECTR=ASC(B$(I+17,I+17))+256*ASC(
    B$(I+18,I+18))
GJ  1230 FOR I=C0 TO 378 STEP 126:X=USR(SR
    ADR,BADR,SECTR,C1,C3)
FK  1240 G$(I+C1,I+126)=B$(C1,126):SECTR=A
    SC(B$(127,127))+256*ASC(B$(128,128)):N
    EXT I
SQ  1250 X=USR(SRADR,BADR,SECTR,C1,C3):G$(
    505,572)=B$(C1,68)
MN  1260 REM DISPLAY ICON
QT  1270 GRAPHICS MODE+FULLSCREEN
YH  1280 COLOR C1:PLOT 30,C6:DRAWTO 121,C6
    :DRAWTO 121,61:DRAWTO 30,61:DRAWTO 30,
    C6
NL  1290 L=ADR(G$):SCRMEM=PEEK(88)+PEEK(89
    )*256:SCRMEM=SCRMEM+C8*20+C4
NT  1300 FOR X=SCRMEM TO 1020+SCRMEM STEP
    20:I=USR(MOV,L,X,11):L=L+11:NEXT X
HV  1310 COLOR C0:PLOT 35,C8:DRAWTO 35,59:
    COLOR C1:PLOT 34,C6:DRAWTO 34,61
KU  1320 COLOR C0:FOR Y=C6 TO 61:PLOT 30,Y
    :DRAWTO 33,Y:NEXT Y
KI  1330 COLOR C0:PLOT 116,C8:DRAWTO 116,5
    9:COLOR C1:PLOT 117,C6:DRAWTO 117,61
WZ  1340 COLOR C0:FOR Y=C6 TO 61:PLOT 118,
    Y:DRAWTO 121,Y:NEXT Y
PG  1350 GRAPHICS MODE+NOCLEAR:POKE 710,C0
    :POKE 752,C1
OP  1360 ? "■          RETURN to convert ":?
    "          ESC   to load new icon     "
CP  1370 ? :POKE 709,202:POKE 752,C1
JB  1380 GOSUB 2680:IF KEY=155 THEN 1410
JS  1390 IF KEY=27 THEN 1110
SG  1400 GOTO 1380
HS  1410 REM CONVERT
NP  1420 ? "■          Converting to ATASCII.
    ":? "             Please wait...."
ZU  1430 TRAP CLEAR:CHAR=C1:COLOR C1
NL  1440 FOR Y=C8 TO 58 STEP C2:PLOT 32,Y
KW  1450 FOR X=36 TO 114 STEP C2
IB  1460 CELL$="0000"
ZY  1470 LOCATE X+C0,Y+C0,CELL:IF CELL THE
    N CELL$(C1,C1)="1"
EM  1480 LOCATE X+C1,Y+C0,CELL:IF CELL THE
    N CELL$(C2,C2)="1"
IP  1490 LOCATE X+C0,Y+C1,CELL:IF CELL THE
    N CELL$(C3,C3)="1"
MB  1500 LOCATE X+C1,Y+C1,CELL:IF CELL THE
    N CELL$(C4,C4)="1"
GJ  1510 I=USR(ADR(DD$),ADR(CELL$),ADR(CEL
    L2$),LEN(CELL2$))
ZE  1520 SCREEN$(CHAR,CHAR)=CHAR$(I,I):CHA
    R=CHAR+C1
LR  1530 NEXT X
MF  1540 NEXT Y
MX  1550 REM PRINT ATASCII SCREEN
JG  1560 GRAPHICS C0:POKE 710,C0:POKE 752,
    C1:? "■";
OJ  1570 FOR LINE=C0 TO 22:POSITION C0,LIN
    E
ZZ  1580 ? SCREEN$(C1+(LINE+C2*TOP)*40,40+
    (LINE+C2*TOP)*40);
ND  1590 NEXT LINE
UU  1600 POSITION C0,LINE:? SCREEN$(C1+(LI
    NE+C2*TOP)*40,39+(LINE+C2*TOP)*40);:IF
     NOT W THEN 1650
ZR  1610 POSITION C8,20:? "████████████████
    ████████";
LF  1620 POSITION C8,21:? "■RETURN to save
     screen■";
```

continued on next page

```
DL 1630 POSITION C8,22:? "ESC to exit
   ";
GZ 1640 POSITION C8,23:? "
   ";
TP 1650 GOSUB 2680:IF KEY=155 THEN 1760
WB 1660 IF KEY=27 THEN RUN
MP 1670 IF KEY=32 THEN 1710
SY 1680 IF KEY=45 AND TOP=0 THEN TOP=1:GO
   TO 1570
RM 1690 IF KEY=61 AND TOP=1 THEN TOP=0:GO
   TO 1570
SJ 1700 GOTO 1650
RF 1710 W= NOT W:IF W THEN 1610
SK 1720 FOR L=20 TO 23
WM 1730 POSITION C8,L:? SCREEN$(C9+(L+C2*
   TOP)*40,31+(L+C2*TOP)*40);
SP 1740 NEXT L:GOTO 1650
AA 1750 POSITION C8,23:? SCREEN$(C9+23*40
   ,31+23*40);:GOTO 1650
QS 1760 REM SAVE ATASCII FILE
BT 1770 POKE 703,C4:TRAP OFF:TRAP 2600
UM 1780 ? "       Filename to save?"
MK 1790 ? "        ( RETURN for directory)"
SI 1800 POKE 752,C0:INPUT FILENAME$
UM 1810 IF FILENAME$="" THEN GOSUB 2320:G
   OTO 1760
NN 1820 X=USR(SRADR,BADR,361,C1,C3):IF B$
   (C1,15)="PRINT SHOP:CLK!" THEN GOSUB 2
   570:GOTO 1780
TO 1830 TEMP$="D1:":TEMP$(C4)=FILENAME$:F
   ILENAME$=TEMP$
FN 1840 CLOSE #C1:OPEN #C1,C8,C0,FILENAME
   $
FX 1850 FOR LINE=C0 TO 25
ZS 1860 ? #C1;SCREEN$(C1+LINE*40,40+LINE*
   40)
ME 1870 NEXT LINE:CLOSE #C1:TRAP OFF
TK 1880 GOTO 1560
BJ 1890 REM INIT
CF 1900 C0=0:C1=1:C2=2:C3=3:C4=4:C5=5:C6=
   6:C7=7:C8=8:C9=9:C16=16
AS 1910 MODE=C6:FULLSCREEN=C16:NOCLEAR=C2
   *C16:W=C1:OFF=40000
NH 1920 DIM CELL$(C4),CELL2$(C4*C16),SCRE
   EN$(1040),CHAR$(C16),FILENAME$(20),TEM
   P$(20)
XP 1930 DIM B$(128),BL$(40),CC$(140),D$(2
   048),G$(616),GNAME$(16),MOV$(46),P$(14
   56),PG$(616)
ND 1940 DIM PT$(1456),SR$(55),T$(183),DD$
   (72)
NO 1950 SR$(C1)="hh..."
IV 1960 MOV$="hh...":MOV=ADR(MOV$)
VK 1970 DD$="hh..."
EA 1980 P$(C1)="":P$(1456)="":P$(C2)=P$
   :B$(C1,128)=P$(C1,128):G$(C1,616)=P$(C
   1,616):PG$(C1,616)=P$(C1,616)
XA 1990 PT$(C1,1456)=P$(C1,1456):T$(C1)="
   ":T$(182)=" ":T$(C2)=T$:BL$(C1,40)=T$
   (C1,40)
WI 2000 GNAME$(C1,C16)=T$(C1,C16)
ZL 2010 SRADR=ADR(SR$):BADR=ADR(B$):MOV=A
   DR(MOV$)
LN 2020 CELL2$="000000010010001101000101O
   1100111100010011010101111001101111O111
   1"
PR 2030 CHAR$=" ..."
AM 2040 RETURN
KH 2050 REM PRINT SHOP DIRECTORY
CO 2060 GRAPHICS C0:POKE 710,C0:POKE 709,
   C0:POKE 752,255
XU 2070 POSITION C0,C0:? "..."
RP 2080 POSITION C0,C1:? "..."
DO 2090 POSITION C0,C2:? "..."
VM 2100 POSITION C0,C3:? "..."
DC 2110 POSITION C0,C4:? "..."
YT 2120 POSITION C0,C5:? "...":POKE 709,C8
   :RETURN
SP 2130 D$(C1)=" ":D$(2048)=" ":D$(C2)=D$
   :K=C0:L=C0:POKE 54286,64
CT 2140 X=USR(SRADR,BADR,361,C1,C3):IF B$
   (C1,15)<>"PRINT SHOP:CLK!" THEN GOSUB
   2510:RETURN
ZO 2150 POSITION C4,C7:? "Reading Directo
   ry...wait......";
PR 2160 FOR SECTR=362 TO 393:X=USR(SRADR,
   BADR,SECTR,C1,C3)
AD 2170 FOR X=C0 TO 96 STEP 32:IF B$(X+20
   ,X+20)<>"X" AND B$(X+20,X+20)<>"x" THE
   N 2190
ZE 2180 D$(C16*K+C1,C16*K+C16)=B$(X+C1,X+
   C16):K=K+1
EG 2190 NEXT X:NEXT SECTR:POSITION C0,C6:
   ? BL$(C1,39)
NZ 2200 FOR I=C0 TO 11:POSITION C3,C7+I:?
    D$(C16*(L+I)+C1,C16*(L+I)+C16);"  ";D
   $(C16*(L+I+12)+C1,C16*(L+I+12)+C16)
EX 2210 NEXT I
AZ 2220 IF K<25 THEN RETURN
RL 2230 POSITION C9,20:? "RETURN for more
   "
DZ 2240 POSITION C9,21:? "ESC to load
   icon"
QT 2250 GOSUB 2680:IF KEY=155 THEN 2280
OW 2260 IF KEY=27 THEN RETURN
RK 2270 GOTO 2250
LN 2280 IF L+25>K THEN L=C0:GOTO 2200
PA 2290 L=L+24:GOTO 2200
PX 2300 IF L-24<0 THEN L=K-24:GOTO 2200
OW 2310 L=L-24:GOTO 2200
TS 2320 REM DOS DIRECTORY
AR 2330 GOSUB 2060
AF 2340 D$(C1)=" ":D$(2048)=" ":D$(C2)=D$
   :K=C0:L=C0
NV 2350 CLOSE #C1:OPEN #C1,C6,C0,"D1:*.*"
CO 2360 INPUT #C1,FILENAME$
VH 2370 IF FILENAME$(C4,11)="SHOP:CLK" TH
   EN GOSUB 2570:RETURN
NK 2380 IF FILENAME$(C5,C8)="FREE" THEN C
   LOSE #C1:GOTO 2410
VQ 2390 D$(17*K+C1,17*K+LEN(FILENAME$))=F
   ILENAME$:K=K+C1
RS 2400 GOTO 2360
IX 2410 FOR I=C0 TO C8:POSITION C1,C7+I:?
    D$(17*(L+I)+C1,17*(L+I)+17);"  ";D$(C1
   7*(L+I+C9)+C1,17*(L+I+C9)+17)
KT 2420 NEXT I:? :? FILENAME$
CF 2430 IF K<18 THEN RETURN
RS 2440 POSITION C9,20:? "RETURN for more
   "
KN 2450 POSITION C9,21:? "ESC to save
   file"
UZ 2460 GOSUB 2680:IF KEY=155 THEN 2490
PG 2470 IF KEY=27 THEN RETURN
TC 2480 GOTO 2460
QM 2490 IF L+18>K THEN L=C0:GOTO 2410
RT 2500 L=L+18:GOTO 2410
DP 2510 GOSUB 2660
OX 2520 ? "       Not a PrintShop data dis
   k."
KL 2530 GOSUB 2670:RETURN
DY 2540 GOSUB 2660
ZP 2550 ? "        ";CHR$(34);GNAME$;CHR$(3
   4);" not on this disk."
KU 2560 GOSUB 2670:RETURN
EH 2570 GOSUB 2660
RR 2580 ? "       Not a DOS II format disk
   "
LD 2590 GOSUB 2670:RETURN
OI 2600 POKE 703,C4:POKE 709,C8:POKE 752,
   C1
OG 2610 ? "
   "
XO 2620 ? "     *** DISK ERROR ***  Inser
   t "
YV 2630 ? "   DOS II data disk-Press RETU
   RN"
PD 2640 ? "
   ";
JB 2650 GOSUB 2680:GOTO 1770
SK 2660 POKE 703,C4:POKE 709,C8:POKE 752,
   C1:RETURN
FZ 2670 ? "    Insert data disk-Press RETU
   RN"
GC 2680 CLOSE #C1:OPEN #C1,C4,C0,"K:":GET
    #C1,KEY:CLOSE #C1:RETURN
EP 2690 GOSUB 2660
```

LISTING 2

```
AO 10 REM ICONVERTER, LISTING TWO
YO 20 REM BY JIM JOHNSON
FJ 30 REM (c) 1985,1987 ANTIC PUBLISHING
DZ 35 REM (CREATES LINES 1950-1970 AND 20
   30 FOR LISTING ONE)
```

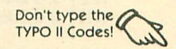
```
EV 40 REM (LINES 10-250 MAY BE USED WITH
   OTHER BASIC LOADERS IN THIS ISSUE.
IJ 50 REM CHANGE LINE 70 AS NECESSARY.)
PR 60 DIM FN$(20),TEMP$(20),AR$(93):DPL=P
   EEK(10592):POKE 10592,255
WO 70 FN$="D:LINES.LST":REM THIS IS THE N
   AME OF THE DISK FILE TO BE CREATED
RD 80 ? "Disk or Cassette?";:POKE 764,25
   5
PY 90 IF  NOT (PEEK(764)=18 OR PEEK(764)=
   58) THEN 90
TH 100 IF PEEK(764)=18 THEN FN$="C:"
VB 110 POKE 764,255:GRAPHICS 0:? "       AN
   TIC'S GENERIC BASIC LOADER"
MY 120 ? ,"BY CHARLES JACKSON"
KB 130 POKE 10592,DPL:TRAP 200
PU 140 ? :? :? "Creating ";FN$:? "...Plea
   se stand by."
LW 150 RESTORE :READ LN:LM=LN:DIM A$(LN):
   C=1
BQ 160 AR$="":READ AR$
YC 170 FOR X=1 TO LEN(AR$) STEP 3:POKE 75
   2,255
DM 180 LM=LM-1:POSITION 10,10:? "(Countdo
   wn...T-";INT(LM/10);")       "
BK 190 A$(C,C)=CHR$(VAL(AR$(X,X+2))):C=C+
   1:NEXT X:GOTO 160
MM 200 IF PEEK(195)=5 THEN ? :? :? "TOO
   MANY DATA LINES!":? "CANNOT CREATE FIL
   E!":END
CM 210 IF C<LN+1 THEN ? :? "TOO FEW DATA
   LINES!":? "CANNOT CREATE FILE!":END
UQ 220 IF FN$="C:" THEN ? :? " Prepare ca
   ssette, press [RETURN]"
AR 230 OPEN #1,8,0,FN$
PV 240 POKE 766,1:? #1;A$;:POKE 766,0
AL 250 CLOSE #1:GRAPHICS 0:? "COMPLETED
   "
KD 1000 DATA 258
AK 1010 DATA 0490570530480320830820360400
   6704904106103410410414100500310414100 4
   003104141011003104141010003
ZV 1020 DATA 1041041410010031041041701690
   8214100200303208322820217300300320100 1
   2400042240000208241169000133
IU 1030 DATA 2131730030031332120960341550
   4905705404803207707908603606103410410 4
   1332411041332401041332131 04
VY 1040 DATA 1332121041332391041332381600
   0017724014521223021220800223021323024 0
   2080022302411982382208234198
YJ 1050 DATA 2390162300960340580770790860
   6106506808204007707908603604115504905 7
   0550480320680680360610341 04
TS 1060 DATA 1041332041041332031041332061
   0413320510410413320716200014225500613 4
   2132321600001772032092052 08
BB 1070 DATA 0082001920042082451342120961
   7325500602410500419720724001614125500 6
   1652050241050041332051442 17
DA 1080 DATA 2302061762130130001332120960
   3415505004805104803206707206508203606 1
   0340320090150210111531401 40
OW 1090 DATA 0121390251391491431371600341
   55
```

print shop icons for your mailing lists

DESIGNER MAIL MERGE

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LISTING 1



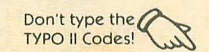

```
VJ 10 REM PSLABELS MODIFICATION
IY 20 REM BY JIM PIERSON-PERRY
PT 30 REM (c)1987, ANTIC PUBLISHING
WL 40 REM (PSLABELS WAS ORIG. PUBLISHED
         IN THE APRIL, 1987 ANTIC)
FD 1007 REM THANKS TO WALT MCCREA FOR
         IDEA AND INITIAL PROGRAMMING
GG 1010 REM VER 3.0    AUGUST, 1987
TM 1240 A$="ENTER TEXT":POSITION C8,5:GOS
   UB 1300:RETURN
YY 1250 A$="NEW FONT":POSITION 22,5:GOSUB
    1300:RETURN
TS 1260 A$="PRINT LABELS":POSITION 7,7:GO
   SUB 1300:RETURN
FZ 1270 A$="NEW GRAPHIC":POSITION 21,7:GO
   SUB 1300:RETURN
CT 1280 A$="PRINT FILE":POSITION 7,9:GOSU
   B 1300:RETURN
OI 1290 A$="EXIT PROGRAM":POSITION 21,9:G
   OSUB 1300:RETURN
MN 1300 FOR I=C1 TO LEN(A$):? CHR$(ASC(A$
   (I,I))+128*INV);:NEXT I:INV=C0:RETURN
ZZ 1305 GOSUB 1230
XK 1400 GOSUB 1220:GOTO 1305
BP 2250 POSITION C3,12+3*PRIL:? "Press  O
   PTION  To Stop Printing"
GQ 2255 IF PRIL THEN RETURN
DZ 2475 DIM FILE$(12),FILENAME$(14),LINE$
   (1)
LC 2860 INV=C0:FOR MOPT=C1 TO C6:GOSUB 12
   30+10*MOPT:NEXT MOPT
YD 2920 INV=C0:GOSUB 1230+10*MOPT:MOPT=MO
   PT+C1:IF MOPT>C6 THEN MOPT=C1
AH 2930 INV=C1:GOSUB 1230+10*MOPT:GOTO 29
   00
VE 2940 IF MOPT=C6 THEN 2970
SJ 2950 ON MOPT GOSUB 1660,1490,2120,1305
   ,3310:GOSUB 1230:GOSUB 2850
ZK 3310 GOSUB 1230
RR 3320 POSITION 13,C3:? "PRINT FILE"
AD 3330 POSITION C3,C5:? "PRINT FROM WHAT
    FILE";:INPUT FILE$
GX 3340 FILENAME$(C1,C2)="D:":FILENAME$(C
   3,LEN(FILE$)+2)=FILE$
DB 3350 POSITION C3,C7:? "HOW MANY LINES"
   ;:INPUT NLINE:POSITION C3,C9:? "HOW MA
   NY RECORDS";:INPUT NLABELS
WY 3352 POSITION 11,11:? "Set-up The Prin
   ter":POSITION C9,12:? "Press START To
   Begin"
UV 3354 FOR X=C1 TO 30:NEXT X:IF PEEK(532
   79)<>C6 THEN 3354
ZZ 3360 GOSUB 1230
UZ 3370 POSITION C5,C3:? "INSERT FILE DIS
   K"
AK 3380 POSITION C5,C5:? "PRESS RETURN WH
   EN READY";:INPUT LINE$
JQ 3390 GOSUB 1230:PRIL=1
OI 3400 CLOSE #C1:OPEN #C1,4,0,FILENAME$
FB 3410 FOR PREC=C1 TO NLABELS
VT 3420 POSITION C0,C5:? "---------------
   ------------"
EV 3430 FOR I=C6 TO 12:POSITION C0,I:? "
   ":POSITION 27,I:? "":NEXT I
IB 3440 POSITION C0,13:? "---------------
   ------------"
FG 3450 J=C1:Y=C6:I=C1:T$(C1)=" ":T$(182)
   =" ":T$(C2)=T$
KD 3460 POSITION J,Y
WN 3470 FOR PLIN=C1 TO NLINE
PK 3480 GET #C1,X:IF X=155 THEN 3600
WN 3490 T$(I,I)=CHR$(X):? CHR$(X);:J=J+C1
   :I=I+C1:GOTO 3480
ZE 3600 ? CHR$(X);:I=26*PLIN+1:J=C1:Y=Y+C
   1:POSITION J,Y:NEXT PLIN
AT 3610 GOSUB 1160
BE 3700 GOSUB 2160
BA 3710 ? #C2:IF PEEK(53279)=C3 THEN POP
   :CLOSE #C2:GOSUB 1220:PRIL=0:RETURN
PV 3720 FOR J=C0 TO C6:K=88*J+C1:L=208*J+
   C1
GJ 3730 IF P=C1 THEN ? #C2;CHR$(27);"5029
   6";PG$(K,K+87);PT$(L,L+207):NEXT J:GOT
   O 3760
RQ 3740 ? #C2;CHR$(27);"L";CHR$(88);CHR$(
   C0);PG$(K,K+87);" ";CHR$(27);"L";CHR$(
   208);CHR$(C0);PT$(L,L+207):NEXT J
OV 3760 CLOSE #C2:GOSUB 1220:GOSUB 1230
MR 3800 NEXT PREC
HK 3810 OPEN #C2,C8,C0,"P:":PRIL=C0:GOSUB
    2310:RETURN
```

data in, analysis out

SCIENCE STATISTICIAN

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LISTING 1




```
NQ 1 REM SCIENCE HELPER
YL 2 REM BY ROBERT WITZOFSKY
QE 3 REM (c)1987, ANTIC PUBLISHING
DR 10 GRAPHICS 0:GOTO 13000
SR 20 REM RETURNS VALUE OF FATX FOR CURRE
   NT VALUE OF X
IL 30 FATX=X*SIN(X)
ZU 40 RETURN
YE 100 REM SIMPSON FUNCTION CALCULATES VA
   LUE OF INTEGRAL
SB 110 IF X1=X2 OR LINE$="" THEN ? "▮":?
   "ERROR: Current inputs not valid":GOSU
   B 17000:RETURN
BI 120 ? "▮":? :? "To evaluate the integr
   al it must be"
XO 130 ? "split into n divisions.  This v
   alue"
MB 140 ? "determines the accuracy of the"

OQ 150 ? "answer and the amount of time"
EM 160 ? "needed to determine it"
MJ 170 ? :? "▮Value for n";:TRAP 400:INPU
   T NUMDIV:IF NUMDIV>5000 THEN NUMDIV=50
   00
IC 180 NUMDIV=INT(NUMDIV/20)*20:IF NUMDIV
   <20 THEN NUMDIV=20
MJ 185 TRAP 500
NY 190 ? "▮":? :? "▮t"
RR 200 ? "▮         ";LINE$;" = ?"
MI 210 ? "▮";X1:? :?
FY 220 K=1
QP 230 H=(X2-X1)/NUMDIV
IE 240 X=X1
CX 250 EST=0
HP 260 FOR I=1 TO NUMDIV/2
SB 270 GOSUB 30:FX0=FATX:X=X+H
ST 280 GOSUB 30:FX1=FATX:X=X+H
XV 290 GOSUB 30:FX2=FATX
GU 300 EST=EST+FX0+4*FX1+FX2
SK 310 IF I*2/NUMDIV=K/10 THEN ? "for t="
   ;INT(X*10000)/10000;"     ?=";H/3*EST:K=
   K+1
FX 320 NEXT I
VO 330 GOSUB 17000
ZH 340 RETURN
CC 400 TRAP 400:GOTO 170
DP 500 ? "▮ERROR: can't integrate current
    function":GOSUB 17000:RETURN
ZX 2000 REM ANALYZE DATA
PI 2005 TRAP 2700
GU 2010 ? "▮":IF  NOT DATPT THEN OPT=1:GO
   TO 2100
HL 2020 ? "        TYPE OF ANALYSIS":?
NQ 2030 ? "   1. x vs y"
FV 2040 ? "   2. ln x vs. y"
KQ 2050 ? "   3. x vs. ln y"
ZJ 2060 ? "   4. ln x vs. ln y":? " "
QZ 2070 ? "Which type?";
YE 2080 GET #2,OPT:OPT=OPT-48:IF OPT>4 OR
   OPT<1 THEN 2080
LD 2090 ? "▮▮          STATISTICS":?
GU 2100 FOR I=1 TO 5:R(I)=0:NEXT I
WM 2200 FOR I=1 TO N:Y=Y(I):X=X(I)
SD 2210 IF OPT=2 OR OPT=4 THEN X=LOG(X)
VF 2220 IF OPT=3 OR OPT=4 THEN Y=LOG(Y)
PK 2230 R(1)=X+R(1):R(2)=X*X+R(2)
GS 2240 IF DATPT THEN R(3)=Y+R(3):R(4)=Y*
   Y+R(4):R(5)=Y*X+R(5)
FJ 2250 NEXT I
IO 2300 SX=SQR((N*R(2)-R(1)*R(1))/(N*(N-1
   )))
TQ 2310 MX=R(1)/N:MY=R(3)/N
MM 2320 AX=0:AY=0
PA 2330 FOR I=1 TO N
HB 2340 AX=ABS(MX-X(I))+AX:AY=ABS(MY-Y(I)
   )+AY
FL 2350 NEXT I
AR 2360 AX=AX/N:AY=AY/N
GI 2370 IF DATPT THEN 2400
BG 2380 ? "      _"
PU 2381 ? "    x = ";INT(MX*100000)/100000

HC 2385 ? :? :? "Avg deviation:":? :? "
    of x ";INT(AX*10000)/10000;"    Precis
   ion ";INT(AX/MX*10000)/100;"%"
HF 2390 ? :? :? "Standard deviation:":? :
   ? "    of x ";INT(SX*10000)/10000;"    e
   rror ";INT(SX/SQR(N)*1000)/1000
GG 2395 GOSUB 17000:RETURN
OF 2400 SY=SQR((N*R(4)-R(3)*R(3))/(N*(N-1
   )))
BV 2410 ? "     _                _"
EG 2420 ? "    x=";INT(100000*MX)/100000:P
   OSITION 19,4:? "y=";INT(100000*MY)/100
   000
ZD 2430 POKE 82,2:? :? "Avg deviation:"
KV 2440 ? "  of x ";INT(AX*10000)/10000;"
       precision ";INT(AX/MX*10000)/100;"
   %"
RC 2450 ? "  of y ";INT(AY*10000)/10000;"
       precision ";INT(AY/MY*10000)/100;"
   %"
AI 2460 ? :? "Standard deviation:"
UH 2470 ? "   of x ";INT(SX*10000)/10000;
   "    error ";INT(SX/SQR(N)*1000)/1000
YC 2480 ? "   of y ";INT(SY*10000)/10000;
   "    error ";INT(SY/SQR(N)*1000)/1000
PB 2490 ? :? "y as a function of x":?
QS 2495 TRAP 2610
KY 2496 A=(N*R(5)-R(1)*R(3))/(N*R(2)-R(1)
   *R(1))
OP 2497 B=(R(3)*R(2)-R(1)*R(5))/(N*R(2)-R
   (1)*R(1))
SO 2500 R=0:FOR I=1 TO N
CI 2510 IF OPT=1 THEN TEMP=ABS((A*X(I)+B)
   /Y(I))
MP 2520 IF OPT=3 THEN TEMP=ABS((EXP(B)*EX
   P(A*X(I)))/Y(I))
TV 2530 IF OPT=2 THEN TEMP=ABS((B+A*LOG(X
   (I)))/Y(I))
GJ 2540 IF OPT=4 THEN TEMP=ABS((EXP(B)*X(
   I)^A)/Y(I))
DH 2545 IF TEMP>1 THEN TEMP=1/TEMP
LE 2550 R=R+TEMP:NEXT I:R=R/N
MF 2555 A=INT(A*100000)/100000:IF OPT=3 O
   R OPT=4 THEN B=EXP(B)
FL 2556 B=INT(B*100000)/100000
BF 2560 IF OPT=1 THEN ? "         y= ";A;"*x
   + ";B
VI 2570 IF OPT=3 THEN ? "         y= ";B;"*e
   xp(";A;"*x)"
DH 2580 IF OPT=2 THEN ? "         y= ";B;" +
   ";A;"*ln(x)"
SL 2590 IF OPT=4 THEN ? "         y= ";B;"*x
   ▮";A:?
DS 2600 ? :? "     corr. co-ef. R: ";INT(R*
   100000)/100000
EA 2610 GOSUB 17000
AS 2620 RETURN
VQ 2700 ? "▮":? "ERROR: Can't evaluate th
   e given data"
ZJ 2710 ? "         MATH ERROR!"
EZ 2720 GOSUB 17000:RETURN
UR 3000 REM PLOT FUNCTION 'F' OVER INTERV
   AL X1 -> X2
NQ 3003 TRAP 3300
AY 3005 ? "▮":POSITION 2,10:? "Thinking..
   ."
SD 3010 XMAX=X2
QU 3020 XMIN=X1
ZX 3030 ADD=(XMAX-XMIN)/(NUMX)
EV 3040 X=XMIN:GOSUB 30:YMIN=FATX
```

```
GF 3050 YMAX=YMIN
PN 3060 FOR I=0 TO NUMX
YS 3080 GOSUB 30:Y=FATX
AN 3085 X(I)=X:Y(I)=Y
NC 3090 IF Y>YMAX THEN YMAX=Y
HV 3100 IF Y<YMIN THEN YMIN=Y
GV 3101 X=X+ADD
FF 3103 NEXT I
YE 3105 GRAPHICS 8+16
HL 3106 POKE 710,0:POKE 709,14:COLOR 1
YM 3110 GOSUB 5000
IO 3115 PLOT INT((X(0)-B)/A-0.5),INT(NUMY
   -(Y(0)-D)/C+1.5)
PP 3120 FOR I=1 TO NUMX
NE 3140 DRAWTO INT((X(I)-B)/A-0.5),INT(NU
   MY-(Y(I)-D)/C+1.5)
FL 3160 NEXT I
SA 3165 GOSUB 3500:REM PAXIS
FI 3167 GOSUB 17000
AY 3170 RETURN
YZ 3300 GRAPHICS 0:? "ERROR: can't graph
   this function":? :GOSUB 17000
AK 3310 RETURN
WC 3500 REM DRAW RELATIVE POSITION OF X &
   Y AXIS
PH 3501 REM (USE WORLD CONVERSION FACTORS
   )
BU 3510 IF XMAX>0 AND XMIN<0 THEN X=INT(-
   0.5-B/A)
EZ 3520 IF YMAX>0 AND YMIN<0 THEN Y=INT(N
   UMY+1.5+D/C)
RZ 3530 IF YMAX<0 THEN Y=0
ZX 3540 IF YMIN>0 THEN Y=NUMY
YC 3550 IF XMAX<0 THEN X=NUMX
QY 3560 IF XMIN>0 THEN X=0
DZ 3570 REM DRAW LINES
GT 3580 PLOT 0,Y:DRAWTO NUMX,Y
GN 3590 PLOT X,0:DRAWTO X,NUMY
QY 3600 REM DISPLAY RANGE
VE 3610 X=INT(X/8):IF X>=35 THEN X=35
TM 3620 Y=INT(Y/8)
TF 3630 MLPRINT=ADR(PRINT$)
SP 3640 TEMP$="     ":TEMP$=STR$(YMAX):A=
   USR(MLPRINT,X,0,ADR(TEMP$),4)
BL 3650 TEMP$="     ":TEMP$=STR$(YMIN):A=
   USR(MLPRINT,X,23,ADR(TEMP$),4)
TV 3660 TEMP$="     ":TEMP$=STR$(XMIN):A=
   USR(MLPRINT,0,Y,ADR(TEMP$),4)
PN 3670 TEMP$="     ":TEMP$=STR$(XMAX):A=
   USR(MLPRINT,35,Y,ADR(TEMP$),4)
AP 3700 RETURN
MI 4000 REM GET A FUNCTION OF X
EL 4005 CLOSE #3:OPEN #3,4,0,"E:"
KF 4010 ? "■":POSITION 2,5:? "Enter a fun
   ction"
XJ 4015 ? "          'FATX = ' your function
   "
MY 4020 TRAP 4100
FW 4030 POSITION 2,10:? "30 FATX = ";
IG 4040 INPUT #3;LINE$
KJ 4045 POSITION 2,14:? "CONT"
PQ 4050 POSITION 1,8:? " ";
QR 4060 POKE 842,13:STOP
UA 4070 POKE 842,12
RQ 4071 X=0:GOSUB 30
UA 4075 ? "■":POSITION 2,10:? "Function i
   s:":? "  F(x)=";LINE$
BA 4080 RETURN
ZD 4100 ? "■ERROR: Function is incorrect"
LJ 4110 TRAP 4100:GOTO 4020
LD 4999 REM DETERMINE CONVERSION FACTORS
   FOR PLOT
NJ 5000 A=(XMAX-XMIN)/NUMX
PS 5010 C=(YMAX-YMIN)/NUMY
QU 5020 B=XMIN-A
SR 5030 D=YMIN-C
AP 5040 RETURN
DF 6000 REM GET LIMITS OF INTERVAL
KY 6010 ? "■"
JR 6020 POSITION 2,10:? "Enter limits of
   the interval:"
NZ 6030 TRAP 6100
GQ 6040 ? "x1 = ";:INPUT X1
IB 6050 ? "x2 = ";:INPUT X2
EW 6060 IF X1>X2 THEN TEMP=X1:X1=X2:X2=TE
   MP
OM 6070 ? :? "x1 = ";X1;", x2 = ";X2
EN 6080 GOSUB 17000
BF 6090 RETURN
TJ 6100 TRAP 6100:? "■ERROR: limits incor
   rect"
QB 6110 GOTO 6020
VD 7000 REM HELP
QE 7010 ? "■":? "               HELP":?
CK 7020 ? "F input a function:  by enteri
   ng a":? "  function of x at the prompt
   FATX"
ZM 7025 ? "  remember to enter it as you"
YR 7030 ? "  would a line in a basic prog
   ram":? "  (capitalize everything)"
OV 7040 ? :? "L limits of the interval:
   enter":? "  x1 and x2 the bounds for t
   he ":? "  integration and the graph"
BU 7050 ? :? "I numerical integration of
   the":? "  entered function using Simps
   on's":? "  algorithm (you select n)"
RI 7060 ? :? "G graph the entered functio
   n from":? "  x1 to x2"
EL 7070 GOSUB 17000
MR 7080 ? "■":? "D enter data:  this data
   can be":? "  either x or (x,y) and ca
   n then":? "  be analyzed or plotted"
WC 7090 ? :? "A analysis of entered data:
   data":? "  pts. can be analyzed in s
   everal"
FH 7095 ? "  ways by taking the ln of the
   "
GF 7100 ? "  data and then fitting a curv
   e to":? "  the pts. Values of R close
   to 1"
DG 7110 ? "  indicate a good fit while va
   lues":? "  near 0 indicate a poor one"
DV 7120 ? "  standard and average deviati
   ons":? "  are also calculated as well
   as":? "  errors based on them "
RD 7130 ? :? "P plot the entered data poi
   nts"
WE 7140 ? :? "to print out a screen hit e
   sc at":? "  the continue prompt or at
   a":? "  graphics screen "
EH 7150 GOSUB 17000
AZ 7160 RETURN
OB 8000 REM GET DATA POINTS
GL 8010 ? "■":? "Do you wish to enter:"
BU 8020 ? "     1. data"
WS 8030 ? "     2. data points (x,y)"
ZU 8040 GET #2,OPT:IF OPT<>49 AND OPT<>50
   THEN 8040
VR 8045 DATPT=0:IF OPT=50 THEN DATPT=1
EA 8050 TRAP 8050:POSITION 2,6:? "■Number
   of data points";:INPUT N
WH 8060 ? :? "Enter data x or x,y at the
   prompt"
EH 8070 ? "To make a correction:  enter t
   he ":? "remaining data then make the":
   ? "correction at the end"
ZH 8080 ? :TRAP 8300:Y=0
PS 8090 FOR I=1 TO N
IU 8100 ? "Pt. #";I;" ";:IF DATPT THEN IN
   PUT X,Y:GOTO 8120
VM 8110 INPUT X
WW 8120 X(I)=X:Y(I)=Y:NEXT I:? "■":? "Thi
   s is the entered data:"
MJ 8130 IF DATPT THEN 8150
QJ 8140 FOR I=1 TO N:? "#";I;"  ";X(I):GO
   TO 8160
YK 8150 FOR I=1 TO N:? "#";I;"  (";X(I);"
   , ";Y(I);")"
PZ 8160 NEXT I:? :? "Make corrections (Y/
   N)?";
TV 8165 GET #2,OPT:IF OPT<>89 AND OPT<>12
   1 THEN GOSUB 17000:RETURN
TO 8170 TRAP 8170:? :? "Correct which dat
   a point";:INPUT I
NX 8180 ? "New data";:IF DATPT THEN INPUT
   X,Y:X(I)=X:Y(I)=Y:GOTO 8200
OD 8190 INPUT X:X(I)=X
IS 8200 ? "More corrections (Y/N)?";:GOTO
   8165
CY 8300 ? "ERROR: input incorrect--try ag
   ain":TRAP 8300:GOTO 8100
EQ 9000 REM PLOT
QG 9005 TRAP 9200
VS 9010 YMIN=Y(1):YMAX=Y(1)
TT 9020 XMIN=X(1):XMAX=X(1)
PB 9030 FOR I=1 TO N
HA 9040 IF Y(I)<YMIN THEN YMIN=Y(I)
MD 9050 IF Y(I)>YMAX THEN YMAX=Y(I)
EI 9060 IF X(I)<XMIN THEN XMIN=X(I)
JL 9070 IF X(I)>XMAX THEN XMAX=X(I)
GM 9075 NEXT I
VT 9080 K=(YMAX-YMIN)*0.05:YMAX=YMAX+K:YM
   IN=YMIN-K
PV 9090 K=(XMAX-XMIN)*0.05:XMAX=XMAX+K:XM
   IN=XMIN-K
YP 9100 GOSUB 5000
XT 9110 GRAPHICS 8+16
```

continued on next page

```
GZ 9120 POKE 710,0:POKE 709,14:COLOR 1
PD 9130 FOR I=1 TO N
VU 9140 X=INT((X(I)-B)/A-0.5):Y=INT(NUMY-
   (Y(I)-D)/C+1.5)
LG 9150 PLOT X,Y:PLOT X+1,Y:PLOT X+1,Y+1:
   PLOT X,Y+1
FR 9160 NEXT I
AZ 9170 GOSUB 3500
ES 9180 GOSUB 17000
BK 9190 RETURN
AV 9200 GRAPHICS 0:? "ERROR: data for plo
   t not valid":? :GOSUB 17000
AO 9210 RETURN
VL 13000 REM INITIALIZE
WK 13005 CLOSE #2:OPEN #2,4,0,"K:"
LG 13050 DIM A$(81),PRNT$(192),GRAF$(6),K
   LR$(6),LPR$(10),DUMP$(40)
AT 13055 DIM X(320),Y(320),LINE$(128),PRI
   NT$(167),TEMP$(5),R(5)
EL 13056 LINE$=""
CR 13060 RAD :NUMX=319:NUMY=191:N=NUMX:X1
   =0:X2=1
QX 13110 ? "}":POSITION 2,6
IS 13115 ? "          SCIENCE HELPER"
ZX 13116 ? "       by Robert Witzofsky":?
JB 13120 ? "This program lets you evaluat
   e"
CK 13130 ? "math functions or data sets."

WA 13150 ? :? "For Help, press H at the"
OQ 13160 ? "menu prompt "
OV 13170 GOSUB 17000
HT 13180 ? "}"
CN 14000 REM ML ROUTINE TO PUT TEXT ON A
   GR. 8 SCREEN
UV 14002 LET PRINT$(1,56)="h..hh..
   h.h.h.h.Xhh...Ve X.Ye...
   Vie."
MH 14003 LET PRINT$(57,112)="...i......
   ..X.......e.......e...
   ..."
TY 14004 LET PRINT$(113,167)="..........
   Zm........UN.....DTPG..i ......
   E.P..."
FV 15000 REM INIT. PRINTER
AC 15140 A$="hh.h.h.Kh.h.Nh..hh.......
   .....MHO.......8.K. ...UFL.
   R..Ki .K..FL..."
QF 15150 A$(27,27)=CHR$(155):PRNT$="}":PR
   NT$(192)=PRNT$:PRNT$(2)=PRNT$
KE 15155 ? "}":PRNTER=1
CB 15160 POSITION 2,9:? "WHICH PRINTER?":
   ? :? "1. Epson/Gemini":? "2. Nec 8023"
   :? "3. Prowriter 8510"
JL 15165 ? "4. No printer"
NJ 15170 GET #2,OPT:OPT=OPT-48:IF OPT>4 O
   R OPT<1 THEN ? "ERROR: input not 1 th
   rough 4":GOTO 15160
XT 15180 ON OPT GOSUB 15601,15602,15603,1
   5604
BD 15190 GOTO 18000
DV 15600 REM PRINTER CODES
CA 15601 GRAF$="K@":LPR$="A2":KLR$="@
   ":A1=0:B1=39:C1=1:START=7640:RETURN
KO 15602 GRAF$="S0192":LPR$=">T16N":K
   LR$="<AN":A1=39:B1=0:C1=-1:START=0:
   RETURN
WF 15603 GRAF$="S0192":LPR$="[T16N":K
   LR$="]AN":A1=39:B1=0:C1=-1:START=0:
   RETURN
RV 15604 PRNTER=0:RETURN
KJ 15900 REM EXIT
DL 15910 ? "}":POSITION 4,10:? "QUIT (Y/N
   )?";
GW 15920 GET #2,OPT
WP 15930 IF OPT=89 OR OPT=121 THEN ? "}":
   END
EY 15940 RETURN
VP 16000 REM PRINT SCREEN
EG 16005 TRAP 16200:CLOSE #1:OPEN #1,8,0,
   "P:"
KY 16010 IF PEEK(87)=8 THEN 16100
VK 16011 REM DUMP GR.0 SCREEN
PV 16020 ? #1,KLR$
KW 16030 FOR J=0 TO 23:FOR I=0 TO 39:LOCA
   TE I,J,DUMP:DUMP$(I+1)=CHR$(DUMP):NEXT
    I
XA 16040 ? #1;DUMP$:NEXT J
ED 16050 RETURN
BA 16100 REM DUMP GR.8 SCREEN
YI 16110 SLOC=PEEK(88)+PEEK(89)*256+START
SK 16120 ? #1,LPR$
CV 16130 FOR N1=A1 TO B1 STEP C1:X=USR(AD
   R(A$),SLOC+N1,ADR(PRNT$),T):? #1;GRAF$
   ;PRNT$:NEXT N1
XG 16140 ? #1,KLR$:CLOSE #1:RETURN
PW 16200 POP :GOTO 17000
UQ 16999 REM WAIT FOR KEYPRESS
UL 17000 IF PEEK(87)=0 THEN ? :? "Press a
   ny key to continue":? :? "  ( [ESC] to
    print the screen)";
AL 17010 GET #2,OPT:IF OPT=27 AND PRNTER
   THEN GOSUB 16000
DT 17020 RETURN
WO 18000 REM GET MENU CHOICE
LW 18010 GRAPHICS 0
VA 18020 POSITION 13,5:? "OPTION MENU"
TV 18030 POKE 82,8:?
QF 18040 ? "H-elp"
RE 18050 ? "F-unction to input"
RY 18060 ? "L-imits of interval"
GJ 18070 ? "I-integrate the function"
LO 18080 ? "G-raph the function"
OS 18090 ? "D-ata points to input"
IV 18100 ? "A-nalysis of data"
EC 18110 ? "P-lot data points"
BN 18120 ? "Q-uit"
XP 18130 ? " "
AT 18140 ? "Your choice?";
NN 18150 GET #2,OPT:IF OPT>96 AND OPT<120
    THEN OPT=OPT-32
EK 18160 MENU=0
XS 18170 IF OPT=72 THEN MENU=1
XT 18180 IF OPT=70 THEN MENU=2
CK 18190 IF OPT=76 THEN MENU=3
AL 18200 IF OPT=73 THEN MENU=4
AM 18210 IF OPT=71 THEN MENU=5
FE 18220 IF OPT=68 THEN MENU=6
EQ 18230 IF OPT=65 THEN MENU=7
EA 18240 IF OPT=80 THEN MENU=8
FU 18250 IF OPT=81 THEN MENU=9
CY 18260 IF MENU=0 THEN 18150
SI 18270 POKE 82,2
PL 18280 ON MENU GOSUB 7000,4000,6000,100
   ,3000,8000,2000,9000,15900
BM 18290 GOTO 18000
```

LISTING 2

```
JV 10 REM SCIENCE HELPER, LISTING 2
PQ 20 REM BY ROBERT WITZOFSKY
FJ 30 REM (c) 1985,1987 ANTIC PUBLISHING
EB 35 REM (CREATES LINES 14002-15140)
EV 40 REM (LINES 10-250 MAY BE USED WITH
   OTHER BASIC LOADERS IN THIS ISSUE.
IJ 50 REM CHANGE LINE 70 AS NECESSARY.)
PR 60 DIM FN$(20),TEMP$(20),AR$(93):DPL=P
   EEK(10592):POKE 10592,255
WO 70 FN$="D:LINES.LST":REM THIS IS THE N
   AME OF THE DISK FILE TO BE CREATED
RD 80 ? "Disk or Cassette?";:POKE 764,25
   5
PY 90 IF  NOT (PEEK(764)=18 OR PEEK(764)=
   58) THEN 90
TH 100 IF PEEK(764)=18 THEN FN$="C:"
VB 110 POKE 764,255:GRAPHICS 0:? "      AN
   TIC'S GENERIC BASIC LOADER"
MY 120 ? ,"BY CHARLES JACKSON"
KB 130 POKE 10592,DPL:TRAP 200
PU 140 ? :? :? "Creating ";FN$:? "...plea
   se stand by."
LW 150 RESTORE :READ LN:LM=LN:DIM A$(LN):
   C=1
BQ 160 AR$="":READ AR$
YC 170 FOR X=1 TO LEN(AR$) STEP 3:POKE 75
   2,255
DM 180 LM=LM-1:POSITION 10,10:? "(Countdo
   wn...T-";INT(LM/10);")      "
BK 190 A$(C,C)=CHR$(VAL(AR$(X,X+2))):C=C+
   1:NEXT X:GOTO 160
MM 200 IF PEEK(195)=5 THEN ? :? :? "TOO
   MANY DATA LINES!":? "CANNOT CREATE FIL
   E!":END
CM 210 IF C<LN+1 THEN ? :? "TOO FEW DATA
    LINES!":? "CANNOT CREATE FILE!":END
UQ 220 IF FN$="C:" THEN ? :? " Prepare ca
   ssette, press [RETURN]"
AR 230 OPEN #1,8,0,FN$
PV 240 POKE 766,1:? #1;A$;:POKE 766,0
AL 250 CLOSE #1:GRAPHICS 0:? "COMPLETED
   "
KN 1000 DATA 367
PF 1010 DATA 049052048048048050032076069084
   0320800820730780840360400490440530540
   41061034104201004240009170240
GH 1020 DATA 005104104202208251096104133 2
```

```
   151041332141041041681041332171041332166
   1041042402361332120241652 14
UW 1030 DATA 1010881332141650891012151332
   1515224001516521410506413303415504905 2
   048048051032076069084032080
EV 1040 DATA 0820730780840360400530550440
   4904905004106103421416521510500113321 5
   136208241132221160000132220
UH 1050 DATA 1772161600001700160011361322
   1313804109620800041690640160142010322 08
   004169000016006201064208002
PE 1060 DATA 1690321332181380410310052180
   3415504905204804805203207606908403208 0
   082073078084036040049049051
DE 1070 DATA 0440490540550410610341332181
   6900016200300621804220220825010924400 2
   1332191642211772180692131 64
EB 1080 DATA 2201452142001322201962122081
   8202416521410504013321414400223021523 0
   221169008197221208159096207
JN 1090 DATA 0341550490530480480480320820
   6907703207307807308404603208000820730 78
   084069082155049053049052048
JQ 1100 DATA 0320650360610341041041332041
   0413320310413320610413320516000013220 7
   104104133208160000177203201
TK 1110 DATA 0002080021691542010132080021
   6901216420714520520013220719219224003 2
   165208201002176013056165203
DF 1120 DATA 2330401332031762141982041442
   1002416520310504013320314420123020417 6
   197096034155
```

40 crypts full of monsters & magic

DUNGEON ARCADE

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LISTING 1

Don't type the TYPO II Codes!

```
BH 10 REM DUNGEON ARCADE
XN 20 REM BY NADAV GUR
PT 30 REM (c)1987, ANTIC PUBLISHING
QY 40 BRK=PEEK(53279)<>5
GU 90 GOTO 30000
JJ 95 POKE 77,0:IF BRK THEN POKE 16,112:P
   OKE 53774,112
AP 98 RETURN
XR 100 HS=INT(RND(0)*35)+1:LIVE=0
RB 110 HS=HS-AC-10:IF CS>0 THEN LIVE=1
SV 115 IF FREEZ THEN HS=ABS(HS):GOTO 130
ZV 120 IF HS<1 THEN LINE$="You missed!":G
   OTO 1200
OL 130 IF ABS(MX-PX)<>1 OR MY<>PY THEN LI
   NE$="No use hitting that...":GOTO 1200
FM 140 FOR L=1 TO 5:FOR A=1 TO 3:SOUND 0,
   A*L,4,3
MX 150 CH$=CHR$(15+A)
KB 160 POSITION MX,MY:? CH$;:POSITION 12,
   0:? INT(RND(0)*30);:NEXT A:NEXT L:IF H
   P>500 THEN HS=HS+HP-500
GB 170 POSITION 12,0:? "  ▦▦";HS;:POSITIO
   N MX,MY:? "□";:SOUND 0,0,0,0
OT 180 CS=CS-HS:IF HS<10 THEN LINE$="Lous
   y ":GOTO 200
PR 190 IF HS<20 THEN LINE$="Good ":GOTO 2
   00
OI 195 IF HS<30 THEN LINE$="Stunning ":GO
   TO 200
DO 197 LINE$="Super "
RX 200 LINE$(LEN(LINE$)+1)="hit":IF (CS<1
   ) AND (LIVE) THEN 24000
KF 210 GOTO 1200
BW 300 DIST=SQR((PX-MX)*(PX-MX)+(PY-MY)*(
   PY-MY)):IF DIST>10 THEN LINE$="Not in
   range!":GOTO 1200
IK 320 COLOR 12:PLOT PX,PY:DRAWTO MX,MY
UY 330 FOR A=0 TO 20:SOUND 0,A,0,10:NEXT
   A:FOR A=19 TO 0 STEP -1:SOUND 0,A,0,10
   :NEXT A:SOUND 0,0,0,0
MK 340 COLOR 32:PLOT MX,MY:DRAWTO PX,PY
LW 350 POSITION PX,PY:? "□";:POSITION MX,
   MY:? "□";:SP=0:POSITION 22,1:? "
   ";:FREEZ=1
KQ 360 GOTO 1200
BW 450 POSITION 37,0:? "  ";:FOR BX=PX+XI
   NC TO PX+10*XINC STEP XINC
JA 460 LOCATE BX,PY,Z:POSITION BX,PY:? "◙
   ";
IT 470 IF Z<>32 OR BX=3 OR BX=38 THEN POS
   ITION BX,PY:? CHR$(Z);:POP :GOTO 490
AN 480 SOUND 0,BX,0,10:FOR A=1 TO 5:NEXT
   A:POSITION BX,PY:? " ";:NEXT BX
EN 490 IF BX<38 AND BX>2 THEN GOSUB 590:G
   OSUB 23000
JR 500 FOR A=1 TO 3
DJ 510 IF PY-A>2 AND BX+A<38 AND BX-A>2 T
   HEN LOCATE BX,PY-A,Z:POSITION BX,PY-A:
   ? "◙";:GOSUB 590
ZT 520 IF PY+A<22 AND BX+A<38 AND BX-A>2
   THEN LOCATE BX,PY+A,Z:POSITION BX,PY+A
   :? "◙";:GOSUB 590
XF 530 IF BX+A<38 THEN LOCATE BX+A,PY,Z:P
   OSITION BX+A,PY:? "◙";:GOSUB 590
TJ 540 IF BX-A>2 THEN LOCATE BX-A,PY,Z:PO
   SITION BX-A,PY:? "◙";:GOSUB 590
GK 550 SOUND 0,A*10,0,10:FOR L=1 TO 10:NE
   XT L:NEXT A
SD 560 SOUND 0,0,0,0:FB=0:FOR A=1 TO 3:IF
    PY-A>2 AND BX+A<38 AND BX-A>2 THEN PO
   SITION BX,PY-A:? " ";
ES 570 IF PY+A<22 AND BX+A<38 AND BX-A>2
   THEN POSITION BX,PY+A:? " ";
OQ 580 IF BX-A>2 THEN POSITION BX-A,PY:?
   " ";
HG 582 IF BX+A<38 THEN POSITION BX+A,PY:?
    " ";
LX 585 NEXT A:GOTO 1200
QX 590 IF Z=22 THEN CS=CS-INT(RND(0)*80)
TV 591 IF Z=13 THEN HP=HP-INT(RND(0)*80)
AI 595 RETURN
ZZ 600 LOCATE MX+LXI,MY+LYI,Z:POSITION MX
   +LXI,MY+LYI:? CHR$(Z);
PM 610 IF (Z=32) OR (Z>1 AND Z<9) THEN MX
   INC=LXI:MYINC=LYI:GOTO 1400
QH 620 IF Z=15 THEN CS=CS-INT(RND(0)*10):
   GOTO 1400
VA 700 IF MXINC=0 OR RND(0)<0.3 THEN 730
UY 710 T=MXINC:MXINC=0:GOSUB 800:IF OK TH
   EN 1400
VK 720 MXINC=T
NJ 730 IF MYINC=0 THEN 760
WA 740 T=MYINC:MYINC=0:GOSUB 800:IF OK TH
   EN 1400
VW 750 MYINC=T
QB 760 MYINC=-MYINC:MXINC=-MXINC:GOSUB 80
   0:IF OK THEN 1400
ME 770 GOTO 1410
BR 800 LOCATE MX+MXINC,MY+MYINC,Z:OK=0:IF
    Z=32 OR Z=15 OR (Z>1 AND Z<9) THEN OK
   =1
HW 810 IF Z=15 THEN CS=CS-INT(RND(0)*10)
CJ 820 POSITION MX+MXINC,MY+MYINC:? CHR$(
   Z);:RETURN
SR 900 MHS=INT(RND(0)*30)+HD*2:IF AR THEN
    MHS=MHS-10
AP 910 IF SH THEN MHS=MHS-5
KA 920 LINE$="The ":LINE$(LEN(LINE$)+1)=M
   ON$
LO 925 FOR A=15 TO 20:SOUND 0,A,4,5:FOR D
   =1 TO 4:NEXT D:NEXT A:SOUND 0,0,0,0:SO
   UND 1,0,0,0
TK 930 IF MHS>10 THEN LINE$(LEN(LINE$)+1)
   =" hits":DMG=0:FOR A=1 TO DMD:DMG=DMG+
   INT(RND(0)*6)+1:NEXT A:GOTO 950
BQ 940 LINE$(LEN(LINE$)+1)=" misses":GOTO
    1500
PE 950 FOR A=1 TO 10:POSITION PX,PY:? "□"
```

continued on next page

```
   ;:POSITION PX,PY:? "□";:NEXT A:HP=HP-DMG
MD 960 GOTO 1500
ST 1000 REM MAIN
ZU 1005 POSITION PX,PY:? "□";:IF CONF THEN XINC=INT(RND(0)*3)-1:YINC=INT(RND(0)*3)-1:GOTO 1120
QU 1010 X=PEEK(764):IF X=255 AND PEEK(632)=15 THEN 1210
LI 1012 IF PEEK(632)=14 THEN X=11:REM UP
FF 1014 IF PEEK(632)=13 THEN X=37:REM DOWN
NF 1016 IF PEEK(632)=11 THEN X=57:REM LEFT
TS 1018 IF PEEK(632)=7 THEN X=5:REM RIGHT
QG 1019 IF PEEK(644)=0 THEN X=1
NH 1020 IF X=1 THEN 100
EY 1030 IF X=35 AND SP THEN 300
QQ 1040 IF X=32 AND FB THEN 450
SB 1050 IF X=28 THEN 17000
WV 1055 IF X=13 AND BOW AND ARROWS THEN 3000
HG 1060 IF X<>11 AND X<>5 AND X<>57 AND X<>37 THEN 1200
XM 1070 XINC=0:YINC=XINC
QH 1080 IF X=11 THEN YINC=-1
CP 1090 IF X=37 THEN YINC=1
TE 1100 IF X=57 THEN XINC=-1
YJ 1110 IF X=5 THEN XINC=1
XX 1120 LOCATE PX+XINC,PY+YINC,Z:POSITION PX+XINC,PY+YINC:? CHR$(Z);
CL 1130 IF Z=32 THEN 1190
SY 1140 IF Z=1 THEN LINE$="You bumped into a wall":HP=HP-10:IF CONF THEN CONF=0:LINE$="Confuse potion ended."
DH 1145 IF Z=1 THEN 1200
GO 1150 IF Z=15 THEN LINE$="A trap!!!":HP=HP-INT(RND(0)*10):GOTO 1190
CF 1160 IF (Z>1 AND Z<9) OR Z=10 THEN 7000
JQ 1170 IF Z=9 THEN 8000
KZ 1180 IF Z=22 AND MON THEN 9000
NF 1185 IF Z=11 THEN 13000
IS 1190 POSITION PX,PY:? " ":PX=PX+XINC:PY=PY+YINC:POSITION PX,PY:? "□";
FV 1200 POKE 764,255
GK 1210 IF (CS<1) OR (FREEZ) THEN 1500
CY 1215 MXINC=0:MYINC=0:IF PEEK(53770)<35 THEN 1410
MF 1220 MXINC=1*(PX>MX)-1*(PX<MX)
QB 1230 MYINC=1*(PY>MY)-1*(PY<MY)
HX 1260 LOCATE MX+MXINC,MY+MYINC,Z:POSITION MX+MXINC,MY+MYINC:? CHR$(Z);
FR 1270 IF (Z=32) OR (Z>1 AND Z<9) THEN 1400
VH 1280 IF Z=1 OR Z=11 OR Z=9 THEN 600
PE 1290 IF Z=15 THEN IF RND(0)>0.5 THEN CS=CS-INT(RND(0)*10):GOTO 1400
JS 1310 IF Z=13 AND RND(0)<0.3 THEN 900
XY 1320 IF Z=13 THEN 1410
PL 1400 LXI=MXINC:LYI=MYINC:POSITION MX,MY:? " ";:MX=MX+MXINC:MY=MY+MYINC:POSITION MX,MY:? "□";
YX 1410 IF MISC AND RND(0)>(0.1*ROOM/3) AND PY=MY AND ABS(PX-MX)>3 THEN GOSUB 14000:MISC=MISC-1
PJ 1500 FDL=FDL-1:IF FDL=100 THEN LINE$="You are getting hungry."
EE 1510 IF FDL=50 THEN LINE$="You are very hungry."
QI 1520 IF FDL=0 THEN LINE$="You are starving.":IF FDL/10=INT(FDL/10) THEN HP=HP-1
BX 1530 IF MON AND CS<1 THEN MON=0:POSITION 18,0:? "⊟⊟⊟";
EA 1550 IF CONF AND RND(0)<0.05 THEN CONF=0:LINE$="Confuse potion ended"
EV 1560 IF FREEZ AND (RND(0)<3.0E-03*HD) THEN FREEZ=0:LINE$="Spell ended."
RL 1570 IF RND(0)<2.0E-03 THEN GOSUB 6000
VN 1580 IF HP<1 THEN 26000
NQ 1800 POSITION 5,0:? "   ⊞⊞⊞";HP:IF MON THEN POSITION 18,0:? "   ⊞⊞⊞";CS
CD 1810 IF LINE$="" AND RND(0)<5.0E-03 THEN GOSUB 2000
VR 1820 IF LINE$<>"" THEN POSITION 2,23:? "
   ";:POSITION 2,23:? LINE$;:LINE$=""
NG 1900 GOTO 1000
XO 2000 NUM=INT(RND(0)*18):RESTORE 2500+NUM*10:READ LINE$:FOR A=1 TO LEN(LINE$)
GF 2010 IF LINE$(A,A)<>" " AND LINE$(A,A)<>"!" THEN LINE$(A,A)=CHR$(ASC(LINE$(A,A))+1)
CU 2020 NEXT A:RETURN
QS 2500 DATA @ unhbd ltssdqr9 Trd sgd Enqbd!
MM 2510 DATA Rlhkd+ xnt&qd ♦klnrs cd♦c!
LV 2520 DATA L♦jd ♦ kdes stqm ♦s @katptdqptd
YE 2530 DATA Atx ♦s Rstloor enq adrs ldqbg♦mchrd!
PB 2540 DATA Ehqda♦kkr ♦qd udqx c♦mfdqntr
NP 2550 DATA Xnt&kk mdudq fds nts ne gdqd ♦khud
YV 2560 DATA Lnud hs !
XT 2570 DATA Cnm&s xnt vhrg xnt vdqd gnld>
XF 2580 DATA Sghr hr sgd ohsr!
AG 2590 DATA Fhud to-----------
ZY 2600 DATA Ok♦x Ctmfdnm @qb♦cd!
QT 2610 DATA @ vhy♦qc nmbd r♦hc9 &Trd SXON HH&
FP 2620 DATA V♦sbg nts enq ctbjr---
CZ 2630 DATA &Ots ghl hm Sgd Bnlex Bg♦hq!!!&
VW 2640 DATA Sgd k♦rs ne sgd adrs-
LI 2650 DATA Rtodq Rnesv♦qd eqnl @MSHB! X♦gnn!
YH 2660 DATA --H jmnv xnt ♦qd+ ats vg♦s ♦1 H >
OL 2670 DATA @ unhbd r♦xr9 H&l rn Gnqmx!
BU 3000 ARROWS=ARROWS-1:POSITION 19,1:? "  ⊞⊞";ARROWS;:FOR A=PX+XINC TO PX+15*XINC STEP XINC
ZP 3010 LOCATE A,PY,Z:POSITION A,PY:? CHR$(Z);
UP 3020 IF (Z<>32 AND Z<>22) OR A=38 OR A=3 THEN POP :SOUND 0,0,0,0:GOTO 1200
FJ 3030 POSITION A,PY:? "-";:IF Z=22 THEN POP :GOTO 3070
DI 3040 SOUND 0,A/3,0,2:FOR L=1 TO 5:NEXT L:POSITION A,PY:? " ";:NEXT A
RM 3050 SOUND 0,0,0,0:GOTO 1200
MK 3070 SOUND 0,0,0,0:IF INT(RND(0)*10)>AC THEN CS=CS-INT(RND(0)*15)
OM 3080 GOTO 1200
DA 6000 ON INT(RND(0)*4)+1 GOTO 6010,6030,6050,6070
SP 6010 IF SP THEN LINE$="Your scroll disappeared.":SP=0:POSITION 22,1:? "
   ";
AK 6020 RETURN
KO 6030 IF AR THEN LINE$="Your mail broke up!":AR=0:POSITION 9,1:? "     ";
AQ 6040 RETURN
JD 6050 IF FB THEN LINE$="Your fireball scroll caught fire!":FB=0:POSITION 37,0:? "  ";
AW 6060 RETURN
PW 6070 IF SH THEN LINE$="Your shield cracked!":SH=0:POSITION 2,1:? "      ";
BC 6080 RETURN
RM 7000 FOR A=30 TO 23 STEP -1:SOUND 0,A,10,10:NEXT A:SOUND 0,0,0,0
LB 7005 IF Z=2 THEN SP=1:LINE$="You found a scroll":POSITION 22,1:? "Freeze":GOTO 1190
JN 7010 IF Z=3 THEN 7500
CA 7020 IF Z=4 THEN BOW=1:ARROWS=ARROWS+INT(RND(0)*21):POSITION 15,1:? "Bow:";ARROWS;:GOTO 1190
BR 7030 IF Z=5 THEN LINE$="A fireball!":FB=1:POSITION 37,0:? "fb";:GOTO 1190
EN 7040 IF Z=7 THEN SH=1:POSITION 2,1:? "Shield";:LINE$="A shield!":GOTO 1190
UO 7050 IF Z=8 THEN HP=HP+INT(RND(0)*30):LINE$="You feel better":GOTO 1190
CH 7060 IF Z=10 THEN LINE$="Armor !":POSITION 9,1:? LINE$(1,5);:AR=1:GOTO 1190
UI 7070 X=INT(RND(0)*3)+1:ON X GOTO 7080,7090,7100
TT 7080 LINE$="A healing potion":HP=HP+INT(RND(0)*30):GOTO 1190
FK 7090 LINE$="Confuse Potion!":CONF=1:GOTO 1190
OW 7100 LINE$="It blew up in your face!":HP=HP-INT(RND(0)*21):GOTO 1190
QE 7500 LINE$="You found ":RESTORE 7550+INT(RND(0)*5)*10:READ BUF$:LINE$(LEN(LINE$)+1)=BUF$:FDL=500:GOTO 1190
PQ 7550 DATA a burger
DB 7560 DATA a bag of beans
HF 7570 DATA chop-suey
DH 7580 DATA a pizza
TW 7590 DATA a hot dog
```

```
LG 8000 REM NEW ROOM
CI 8010 ROOM=ROOM+1:IF ROOM=41 THEN 25000
KC 8020 ? "▣";
PA 8100 GOTO 20000
YY 9000 A=INT(RND(0)*2)+1:ON A GOTO 9010,
   9050
DR 9010 X=INT(RND(0)*4):I=1:IF RND(0)<0.5
   THEN I=-1
HM 9015 IF PX+X*I<3 OR PX+X*I>38 THEN 150
   0
AS 9020 X=X*I:LOCATE PX+X,PY,Z:POSITION P
   X+X,PY:? CHR$(Z);
XF 9030 IF Z<>32 THEN 1220
AG 9040 POSITION PX,PY:? " ";:PX=PX+X:POS
   ITION PX,PY:? "□";:GOTO 1190
ED 9050 X=INT(RND(0)*4):I=1:IF RND(0)<0.5
   THEN I=-1
EM 9055 IF MX+X*I<3 OR MX+X*I>38 THEN 150
   0
MW 9060 X=X*I:LOCATE MX+X,MY,Z:POSITION M
   X+X,MY:? CHR$(Z);
XR 9070 IF Z<>32 THEN 1220
LK 9080 POSITION MX,MY:? " ";:MX=MX+X:POS
   ITION MX,MY:? "□";:GOTO 1500
IU 13000 IF PY<>11 THEN LINE$="Broke into
   my store, eh?":HP=HP-INT(RND(0)*70):G
   OTO 1200
EL 13010 LOCATE PX,9,Z:POSITION PX,9:? CH
   R$(Z);
HD 13020 PRICE=100*(Z=2)+50*(Z=3)+150*(Z=
   4)+250*(Z=5)+200*(Z=7)+120*(Z=8)+300*(
   Z=10)
JF 13030 PRICE=INT(PRICE*PRICEADJ)
SK 13040 IF PRICE>GP THEN LINE$=STR$(GP):
   LINE$(LEN(LINE$)+1)=" g.p. is not enou
   gh!":GOTO 1200
CA 13050 POSITION PX,12:? CHR$(Z);:GP=GP-
   PRICE:LINE$="You have "
XJ 13055 LINE$(10)=STR$(GP):LINE$(LEN(LIN
   E$)+1)=" g.p. left."
TW 13060 GOTO 1200
FL 14000 DIR=1*(PX>MX)-1*(PX<MX)
NQ 14010 FOR A=MX+DIR TO PX-DIR STEP DIR
XX 14020 LOCATE A,MY,Z:POSITION A,MY:? CH
   R$(Z);
JS 14030 IF Z<>32 THEN POP :SOUND 0,0,0,0
   :RETURN
MR 14040 POSITION A,MY:? "⊞";:FOR L=0 TO
   0:NEXT L:POSITION A,MY:? "⊠";:FOR L=0
   TO 0:POSITION A,MY:? "⊟";
JI 14045 SOUND 0,A+10,0,5:SOUND 0,A+5,0,5
XH 14050 POSITION A,MY:? " ";:NEXT A:SOUN
   D 0,0,0,0
OY 14055 HT=INT(RND(0)*10)+HD:IF HT<7 THE
   N RETURN
HW 14060 POSITION PX,PY:? "⊟";:POSITION P
   X,PY:? "□";:MDMG=0:FOR A=1 TO MSD:DMG=
   DMG+INT(RND(0)*8):NEXT A:HP=HP-DMG
EH 14070 RETURN
RL 17000 POKE 764,255
ZS 17020 IF PEEK(764)=255 OR PEEK(764)=28
   THEN 17020
SS 17030 GOTO 1000
BY 17999 END
VC 20000 REM INIT NEW ROOM
YR 20005 GRAPHICS 0:A=INT(RND(0)*16):SETC
   OLOR 2,A,0:SETCOLOR 1,A,12:POKE 752,1:
   POKE 756,SET/256
YV 20010 GOSUB 95:MONN=INT(RND(0)*14)+INT
   (RND(0)*ROOM):IF MONN>27 THEN 20010
FU 20015 IF MONN=0 THEN MONN=1
FN 20020 RESTORE 20500+MONN*10-10:POKE 75
   2,1:MISC=0
WX 20030 READ MON$,HD,DMD,AC,MIS,MSD:IF M
   IS THEN MISC=INT(RND(0)*4)
NZ 20040 CS=0:FOR A=1 TO HD:CS=CS+INT(RND
   (0)*30):NEXT A
BT 20050 FOR A=SET+688 TO SET+695:READ L:
   POKE A,L:NEXT A
BC 20055 FREEZ=0:CONF=0
FX 20060 ? "▣Hp:";HP:POSITION 9,0:? "Hs:"
   :POSITION 15,0:? "Cs:";CS:POSITION 22,
   0:? "Xp:";XP:POSITION 29,0:? "Room:";
UG 20070 ? ROOM:POSITION 29,1:? MON$
FC 20080 IF FB THEN POSITION 37,0:? "fb"
ZI 20090 IF SH THEN POSITION 2,1:? "Shiel
   d"
ZU 20100 IF AR THEN POSITION 9,1:? "Armor
   "
FS 20110 IF BOW THEN POSITION 15,1:? "Bow
   :";ARROWS
ZZ 20120 IF SP THEN POSITION 22,1:? "Free
   ze"
IL 20123 POSITION 2,2:? "▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦
   ▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦▦"
JO 20125 COLOR 1:PLOT 38,2:DRAWTO 38,22:D
   RAWTO 2,22:DRAWTO 2,2
HR 20130 WALLS=INT(RND(0)*4)
KU 20135 IF WALLS<1 THEN 20210
QV 20140 FOR A=1 TO WALLS:WALLX=INT(RND(0
   )*33)+4:WALLY=RND(0)
XI 20150 IF WALLY>0.5 THEN WALLY=3
DL 20160 IF WALLY<0.5 THEN WALLY=21
QX 20170 IF WALLY=21 THEN PLOT WALLX,WALL
   Y:DRAWTO WALLX,14
HX 20180 IF WALLY=3 THEN PLOT WALLX,WALLY
   :DRAWTO WALLX,11
DF 20190 NEXT A
HU 20210 TRPS=INT(RND(0)*30)+ROOM/2
JP 20220 FOR A=1 TO TRPS
UG 20230 X=INT(RND(0)*35)+3:Y=INT(RND(0)*
   20)+2:LOCATE X,Y,Z:IF Z=32 THEN POSITI
   ON X,Y:? "◘";
CO 20240 NEXT A
IM 20245 SHOP=INT(RND(0)*6):IF SHOP=2 THE
   N GOSUB 22000
QM 20250 DN=RND(0):IF DN<0.3 THEN 20330
LN 20260 DN=INT(RND(0)*(ROOM/10)):DN=DN+I
   NT(RND(0)*2)+1
XU 20270 FOR A=1 TO DN
SW 20280 THING=INT(RND(0)*12)+1
XM 20290 RESTORE 20295:FOR I=1 TO THING:R
   EAD CH$:NEXT I
WV 20292 IF CH$="◪" AND INT(RND(0)<0.3) T
   HEN CH$="◩"
EJ 20295 DATA ◰,◰,□,◲,◲,□,◪,◪,◱,◪,◩,◪
AL 20300 X=INT(RND(0)*35)+3:Y=INT(RND(0)*
   20)+2:LOCATE X,Y,Z:IF Z<>32 THEN 20300
ZC 20310 POSITION X,Y:? CH$;
CJ 20320 NEXT A
YT 20330 IF PX=37 THEN PX=3:PY=11:GOTO 20
   370
VJ 20340 IF PY=21 THEN PY=3:PX=20:GOTO 20
   370
PB 20350 IF PY=3 THEN PY=21:PX=20:GOTO 20
   370
YT 20360 PY=11:PX=37
IF 20370 POSITION PX,PY:? "□";
ST 20380 MX=INT(RND(0)*36)+3:MY=INT(RND(0
   )*20)+3:LOCATE MX,MY,Z:IF Z<>32 THEN 2
   0380
AO 20385 IF SHOP=2 AND MX>12 AND MX<28 AN
   D MY>6 AND MY<15 THEN 20380
ND 20390 POSITION MX,MY:? "□";
FN 20400 X=INT(RND(0)*4)+1
ER 20410 RESTORE 20450+X*10-10:READ X,Y,X
   2,Y2
EY 20420 COLOR 9:PLOT X,Y:DRAWTO X2,Y2:PO
   SITION X2,Y2:? "⊞";
WI 20430 MON=1
SV 20440 GOTO 1000
QE 20450 DATA 2,13,2,10
DC 20460 DATA 38,10,38,13
VZ 20470 DATA 19,2,23,2
AK 20480 DATA 19,22,23,22
MF 20499 GOTO 20499
SL 20500 DATA Worm,2,1,1,0,0,0,6,3,55,126
   ,230,112,0
CZ 20510 DATA Rat,3,2,2,0,0,0,0,0,120,244
   ,254,120,84
UU 20520 DATA Gnome,3,2,3,1,1,16,56,16,12
   5,186,16,40,108
LQ 20530 DATA Orc,3,3,2,0,0,24,60,25,3,12
   6,24,102,102
PX 20540 DATA Spider,3,3,2,0,0,0,24,60,24
   ,126,189,165,165
KQ 20550 DATA Eagle,4,3,3,0,0,0,153,211,1
   26,60,24,36,0
PW 20560 DATA Manticore,4,3,3,1,2,0,0,102
   ,143,255,124,54,85
OU 20570 DATA Human,5,4,3,1,1,24,25,1,127
   ,153,60,102,102
EF 20580 DATA Wolf,5,3,2,0,0,0,12,134,143
   ,124,124,68,170
FK 20590 DATA Ghost,4,3,5,0,0,24,60,106,1
   26,126,60,28,56
JX 20600 DATA Worg,6,4,4,0,0,0,12,134,143
   ,124,124,68,170
PH 20610 DATA Minotaur,8,4,4,0,0,60,25,1,
   127,153,24,102,102
BS 20620 DATA Jelly,2,5,1,0,0,0,0,0,0,12,
   62,127,173
FT 20630 DATA Hydra,7,5,5,0,0,80,218,83,1
   26,56,124,84,198
UT 20640 DATA Giant,7,5,4,0,0,56,57,147,2
   55,61,57,109,108
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continued on next page

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YS 20650 DATA Firecreep,2,5,7,0,0,12,24,5
   6,104,92,92,56,16
ZN 20660 DATA Troll,8,5,5,0,0,12,12,24,62
   ,57,28,102,99
RS 20670 DATA G.Scorpion,3,6,6,0,0,0,98,1
   47,132,125,63,100,170
RP 20680 DATA Dragon,9,4,5,1,4,16,50,59,1
   86,158,126,60,20
GF 20690 DATA Droid,7,6,8,0,0,24,36,60,12
   6,255,189,36,102
VU 20700 DATA Blob,10,5,7,0,0,24,36,60,11
   8,223,247,124,231
AK 20710 DATA Demon,12,6,6,1,2,24,24,195,
   126,60,24,36,36
UH 20720 DATA Snake,6,8,3,0,0,0,0,120,100
   ,5,57,66,60
LL 20730 DATA Warrior,8,6,6,1,2,27,27,1,1
   27,153,60,102,102
KU 20740 DATA Eye,4,6,7,0,0,0,24,102,153,
   153,102,24,0
CZ 20750 DATA Wierd One,6,8,4,1,2,153,102
   ,60,255,90,24,60,102
FF 20760 DATA Dark one,7,7,6,0,0,24,219,1
   02,60,24,36,102,0
PG 22000 POSITION 12,6:? "
   ":POSITION 12,7:? " ■■■■■■■■■■■■■■■ "
   :POSITION 12,8:? " ■              ■ "
NR 22010 POSITION 12,9:? " ■■ □ ■ ■ ■ ■ ■
   ■ ":POSITION 12,10
IX 22015 ? " ■■■■■■■■■■■■■■ ":POSITION 1
   2,11:? " ■ ■ ■ ■ ■ ■ ■ ■ ■"
OZ 22020 POSITION 13,12:? "■ ■ ■ ■ ■ ■ ■
   ■":POSITION 13,13:? "■            ■":
   POSITION 12,14:? " ■■■■■■  ■■■■■■■ "
HC 22030 POSITION 13,15:? "
   "
SS 22040 RESTORE 22500+(INT(RND(0)*11))*1
   0:READ SHOP$:POSITION 14,8:? SHOP$
JP 22050 PRICEADJ=0.5+RND(0):RETURN
CQ 22500 DATA CATALOGSHOP 1
WJ 22510 DATA CRAZY ORLIC'S
XT 22520 DATA SUPERMARKET V
QG 22530 DATA >SWORDS R US<
RO 22540 DATA ■ DRAGONSDEN■
WM 22550 DATA PIRATES COVE
PL 22560 DATA ■LAST SHOP!!■
UB 22570 DATA ■ STUMPP'S  ■
QG 22580 DATA MEDIEVAL MALL
NV 22590 DATA CHEAP ARMOR ■
FH 22600 DATA KNIGHTDELIGHT
BP 22999 END
VI 23000 POSITION BX,PY:? "■";:FOR L=0 TO
    9:SOUND 0,L,0,10:NEXT L:POSITION BX,P
   Y:? " ":RETURN
ZW 24000 POSITION 2,23:? "You killed the
   ";MON$;:POSITION 18,0:? "■■■";
PU 24010 TREASURE=INT(RND(0)*HD*50)
GZ 24020 GP=GP+TREASURE:MON=0:XP=XP+HD:TX
   T=INT(RND(0)*8):RESTORE 24100+TXT*10:R
   EAD LINE$,PL
JW 24030 LINE$(PL,PL+LEN(STR$(TREASURE))-
   1)=STR$(TREASURE)
FQ 24040 FOR A=1 TO 100:NEXT A:GOTO 1500
QP 24100 DATA In its guts you found      g
   .p.,23
PL 24110 DATA It had a check of      g.p.,
   19
VS 24120 DATA In its pocket it had      g.
   p.,22
BK 24130 DATA You found      g.p.,11
VL 24140 DATA You recovered      g.p.,15
EZ 24150 DATA x   gold piece were in its
   bag,1
LS 24160 DATA Under it you found      g.p.
   ,20
LV 24170 DATA It had gems worth      g.p.,
   19
QU 25000 SCORE=XP*10+GP
HJ 25010 SCORE=SCORE+200*AR+100*SP+5*ARRO
   WS+150*FB+100*SH
XF 25020 GRAPHICS 0:POKE 710,0:POKE 752,1
   :POKE 756,SET/256:? :?
RJ 25030 ? "  Congratulations, brave ":?
   "■■ ";NAME$;" ■"
EE 25040 ? :? " You have shown much coura
   ge,"
YY 25045 ? " Skill and wisdom, and surviv
   ed      ■■■■■        DUNGEON ARCADE"
YO 25050 ? "  You have scored ";XP;" fame
    points,":? " and ";SCORE-10*XP;" fort
   une points, which rate ":? " you as"
CP 25060 IF SCORE<5000 THEN LINE$="An ave
   rage knight.":GOTO 25100
JI 25070 IF SCORE<7000 THEN LINE$="A hero
   .":GOTO 25100
EB 25080 IF SCORE<8000 THEN LINE$="A supe
   r hero.":GOTO 25100
NQ 25090 IF SCORE<9000 THEN LINE$="A supr
   eme lord!":GOTO 25100
XY 25095 LINE$="A true overlord of might!
   "
FJ 25100 ? :? "    ";LINE$
WR 25110 ? :? :? "■ ■ ■":? "■■■■■■":? "■■
   ■■■":? "■■■■■ □":? "■■■■■■■■■■■■"
WJ 25120 ? :? "Would you like to play aga
   in ";:INPUT LINE$
GP 25130 IF LINE$(1,1)<>"Y" AND LINE$(1,1
   )<>"y" THEN END
BJ 25140 GOTO 29000
QW 26000 SCORE=XP*10+GP
HL 26010 SCORE=SCORE+200*AR+100*SP+5*ARRO
   WS+150*FB+100*SH
KS 26020 GRAPHICS 0:POKE 710,0:POKE 752,1
   :POKE 756,SET/256:? :GOSUB 95
XP 26025 ? " ■□ □":? "■■■■■■":?
FF 26030 ? :? "    ";NAME$:? :? "You have
    perished on your quest for"
NU 26040 ? "■■■■■fame & fortune"
WU 26050 ? :? "May you rest well in your
   grave."
ON 26060 ? :? "Overall, you acquired :":?
    "   ";XP;" Fame points,"
KO 26070 ? "   ";SCORE-10*XP;" Fortune po
   ints, a sum of :":? "   ";SCORE;" game
    points."
QG 26080 ? :? :? :? "Do you want to try a
   gain ";:INPUT LINE$
XK 26090 IF LINE$(1,1)<>"Y" AND LINE$(1,1
   )<>"y" THEN GRAPHICS 0:END
GX 29000 ? "■"
IK 29010 ? :? :? :?
UQ 29020 ? "    ■■■■■■         ■■■■■"
KH 29030 ? "    ■■   ■■       ■■   ■■"
KL 29040 ? "    ■■   ■■       ■■   ■■"
KP 29050 ? "    ■■   ■■       ■■   ■■"
AH 29060 ? "    ■■   ■■       ■■■■■■■"
KX 29070 ? "    ■■   ■■       ■■   ■■"
LB 29080 ? "    ■■   ■■       ■■   ■■"
HF 29085 ? "    ■■■■■■ UNGEON ■■   ■■RCA
   DE"
EG 29090 ? :? :? :? "■An Underground Adve
   nture!"
XT 29100 ? :? "(c) 1987 Antic Publishing"
SC 29110 ? "Enter your name, O' Brave adv
   enturer -->";:INPUT #16;NAME$
LI 29120 ? "Welcome to Dungeon Arcade, ";
   NAME$
SZ 29130 FOR A=1 TO 100:NEXT A
PZ 29140 XP=0:HP=400:GP=0:BOW=0:SH=0:SP=0
   :FB=0:FL=500:ROOM=1:ARROWS=0:AR=0
XA 29500 GOTO 20000
CD 29999 END
ZO 30000 DIM LINE$(60),BUF$(60),NAME$(15)
   ,MON$(10),SHOP$(15),KEY$(1),CH$(1),CSE
   T$(168)
YQ 30010 XP=0:HP=400:GP=0:BOW=0:SH=0:SP=0
   :FB=0:FOODL=30:ROOM=1:ARROWS=0
EW 30020 MOV=ADR("hh■■h■■h■■h■■h■■h■■■■■■
   ■■■■■■■■■■■■■■■■■■■■■■■■")
FO 30030 CSET$(1,84)="■■■■■■■■■■■■■■■■<B
   f■■■<■■■22■■■■$Z<<Z$■<fN■■■■■■$ZZ$■■■
   ■■■$Zf<fZf■Zf■Z■■<■■ff<<■■■■"
LV 30040 CSET$(85,168)="■■■■■■■■■■■■■■■■■
   <ff81■■Cp6q■■fZZf■■■ ■■■■■■■ ■ ■■■■■
   ■ ■■■■■<<■■■■ ■<<>■■■■><<■ ■"
CT 30050 POKE 106,PEEK(740):POKE 559,0
GW 30060 SET=PEEK(106)-8:POKE 106,SET-2:S
   ET=SET*256:A=USR(MOV,57344,SET,1024)
QB 30070 GRAPHICS 0:POKE 710,0:POKE 756,S
   ET/256:GOSUB 95
PS 30080 A=USR(MOV,ADR(CSET$),SET+520,168
   ):POKE 559,34
BR 30090 GOTO 29000
```

LISTING 2

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SF 10 REM DUNGEON ARCADE, LISTING TWO
XN 20 REM BY NADAV GUR
FJ 30 REM (c) 1985,1987 ANTIC PUBLISHING
BW 35 REM CREATES LINES 20295 AND 30020-3
   0040
EV 40 REM (LINES 10-250 MAY BE USED WITH
   OTHER BASIC LOADERS IN THIS ISSUE.
IJ 50 REM CHANGE LINE 70 AS NECESSARY.)
PR 60 DIM FN$(20),TEMP$(20),AR$(93):DPL=P
   EEK(10592):POKE 10592,255
WO 70 FN$="D:LINES.LST":REM THIS IS THE N
   AME OF THE DISK FILE TO BE CREATED
```

```
RD 80 ? "}Disk or Cassette?";:POKE 764,25
   5
PY 90 IF  NOT (PEEK(764)=18 OR PEEK(764)=
   58) THEN 90
TH 100 IF PEEK(764)=18 THEN FN$="C:"
VB 110 POKE 764,255:GRAPHICS 0:? "       AN
   TIC'S GENERIC BASIC LOADER"
MY 120 ? ,"BY CHARLES JACKSON"
KB 130 POKE 10592,DPL:TRAP 200
PU 140 ? :? :? "Creating ";FN$:? "...plea
   se stand by."
LW 150 RESTORE :READ LN:LM=LN:DIM A$(LN):
   C=1
BQ 160 AR$="":READ AR$
YC 170 FOR X=1 TO LEN(AR$) STEP 3:POKE 75
   2,255
DM 180 LM=LM-1:POSITION 10,10:? "(Countdo
   wn...T-";INT(LM/10);")        "
BK 190 A$(C,C)=CHR$(VAL(AR$(X,X+2))):C=C+
   1:NEXT X:GOTO 160
MM 200 IF PEEK(195)=5 THEN ? :? :? "TOO
   MANY DATA LINES!":? "CANNOT CREATE FIL
   E!":END
CM 210 IF C<LN+1 THEN ? :? "TOO FEW DATA
    LINES!":? "CANNOT CREATE FILE!":END
UQ 220 IF FN$="C:" THEN ? :? " Prepare ca
   ssette, press [RETURN]"
AR 230 OPEN #1,8,0,FN$
PV 240 POKE 766,1:? #1;A$;:POKE 766,0
AL 250 CLOSE #1:GRAPHICS 0:? " COMPLETED 
   "
FF 1000 DATA 311
AH 1010 DATA 0500480500570530320680650840
   6503200304400304400204400404400404400 2
   0440080440060440050440060 44
```

```
AH 1010 DATA 0500480500570530320680650840
   650320030440030440020440040440040440 02
   044008044006044005044006044
ZR 1020 DATA 0070440081550510480480500480
   320770790860610650680820400341041041 33
   241104133240104133213104133
UP 1030 DATA 2121041332391041332381600001
   772401452122302122080022302132302402 08
   002230241198238208234198239
BB 1040 DATA 0162300960340411550510480480
   510480320670830690840360400490440560 52
   041061034219219000109109000
DQ 1050 DATA 1821820000000361262131260360
   000000600661021261261260600150260260 50
   050026026015000036090060060
QE 1060 DATA 0900360000060102078028024000 0
   240240000240360900090036024000000024 024
   024036090102060102090102126
ZH 1070 DATA 0901020901260240602311951021
   020600600000000012703415505104804805 2
   048032067083069084036040056
SV 1080 DATA 0530440490540560410610341271
   292542540000000001717006800000002402 5
   001127153060102102056108131
OG 1090 DATA 0280671120541130001261020900
   901021260000000640320220080200180000 00
   000064032254032064000000018
GG 1100 DATA 0200080220320640000000240240
   600600240240000000321240600600620040 00
   000004062060060124032000034
IK 1110 DATA 155
```

---

for your .—.—. . . * 8-bit and ST

MORSE CODE TRAINER

Article on page 57

LISTING 1

Don't type the TYPO II Codes!

```
QM 100 REM
DY 110 REM ATARI BASIC MORSE MASTER
NH 120 REM (c) 1987 ANTIC PUBLISHING
VO 130 REM Written by Patrick Bass
ED 140 REM Version 090287
QW 150 REM
GJ 152 REM - - - - - - - - - - - - - - - -
JX 160 LET TRUE=1:LET OFF=40000
CC 170 LET FALSE= NOT TRUE
MY 171 LET EOF=340
RE 172 LET KEYBOARD=1:LET DISK=2
WV 174 LET READ=4:LET WRITE=8
YV 176 OPEN #KEYBOARD,READ,0,"K:"
KE 180 DIM BELL$(1),X$(40),FILENAME$(40)
WT 181 DIM M$(1000),Z$(100)
AO 182 FOR LETTER=0 TO 26
RH 183 READ X$
SY 184 LET INDEX=(LETTER*5)
JK 185 LET M$(INDEX+1)=X$
UO 186 NEXT LETTER
RX 187 REM
NU 188 DATA 0122,1000,1010,1002,0222
JV 189 DATA 0010,1102,0000,0022,0111
QS 190 DATA 1012,0100,1122,1022,1112
OB 191 DATA 0110,1101,0102,0002,1222
JK 192 DATA 0012,0001,0112,1001,1011
CO 193 DATA 1100,END
RQ 194 REM
BR 199 LET BELL$=CHR$(253)
QN 200 REM
XA 210 FOR LOOP=FALSE TO TRUE STEP NOT
QR 220 REM
QX 222 PRINT "}"
AT 224 PRINT " MORSE MASTER!"
TW 225 PRINT
PM 226 TRAP EOF
LD 230 PRINT " Filename  D1:    ";
RM 250 INPUT FILENAME$
VZ 260 OPEN #DISK,READ,0,FILENAME$
RB 270 REM
PG 280 TRAP EOF
WC 290 FOR C=FALSE TO TRUE STEP NOT
YW 300 GET #DISK,CHARACTER
UF 310 GOSUB 450
DP 320 NEXT C
QU 330 REM
ON 340 CLOSE #DISK
QY 350 REM
TU 352 PRINT
WB 360 PRINT "    Read another File? ";
KZ 370 GET #KEYBOARD,KEYSTROKE
FS 380 LET X$=CHR$(KEYSTROKE)
CV 390 IF X$="N" THEN LOOP=(TRUE+TRUE)
QP 400 REM
MX 410 NEXT LOOP
OH 414 END
QT 420 REM
ZB 430 REM ---------------------------
WV 440 REM EMIT CHARACTER
OY 450 LET CH=CHARACTER
LY 452 IF CH>96 THEN CH=(CH-32)
JY 454 LET CHARACTER=CH
TM 460 LET X$=CHR$(CHARACTER)
HJ 470 LET P1=FALSE:LET P2=FALSE
LB 480 IF X$>="A" THEN LET P1=TRUE
YA 482 IF X$<="Z" THEN LET P2=TRUE
KG 490 IF (P1 AND P2) THEN GOSUB 500
ZY 492 RETURN
RT 494 REM
KX 500 REM ----------------------------
TZ 510 LET INDEX=((CHARACTER-65)*5)
AM 512 PRINT CHR$(CHARACTER);
EE 520 LET X$=M$(INDEX+1,INDEX+5)
SM 530 FOR X=1 TO 4
EG 540 LET Z$=X$(X,X)
LJ 545 LET DELAY=0
QO 550 IF Z$="0" THEN DELAY=10
XH 560 IF Z$="1" THEN DELAY=25
WJ 565 IF DELAY THEN GOSUB 600
MD 570 NEXT X
ZR 580 RETURN
RI 590 REM
KY 600 REM ----------------------------
CP 610 SOUND 1,10,10,15
XD 620 FOR D=0 TO DELAY:NEXT D
WH 630 SOUND 1,0,0,0
LN 640 FOR D=0 TO 15:NEXT D
ZU 690 RETURN
```

ST RESOURCE

Morse Code Trainer

Article on page 57

LISTING 1

```
'
' GFA BASIC Morse Master!
' (c) 1987 Antic Publishing
' Written by Patrick Bass
' Version 090187 Tuesday
'
' - - - - - - - - - - - - - - -
@Initialize
'
Repeat
  '
  @Select_file
  '
  If File_found
    @Emit_file
  Endif
  '
  Cls
  Print Bell$;
  Alert 0,"Listen to another file?",2," Yes | No ",Button
  If Button=No
    Let Finished=True
  Endif
  '
Until Finished
'
@Terminate
Edit
End
'
' ------------------------------
Procedure Initialize
  Dim Morse_code$(26)
  Dim Text_buffer%(25000)
  Let Textbuffer=Varptr(Text_buffer%(0))
  '
  Restore Morse_code_datum
  For Letter=1 To 26
    Read Morse_code$(Letter)
  Next Letter
  '
  Let Rez=Xbios(4)
  If Rez=0
    Alert 0,"Please change to|Medium resolution.",1," OK ",Button
    System
  Endif
  '
  Let Drive$=Chr$(Gemdos(25)+Asc("A"))
  Let Bell$=Chr$(7)
  Let Dot$="."
  Let Dash$="-"
  Let Dot_delay=2
  Let Dash_delay=5
  Let Octave=7
  '
  Let Finished=False
  Let Yes=1
  Let No=2
  Let Charw=8
  Let Charh=(8*Rez)
  '
Return
'
' - - - - - - - - - - - - - - - -
Morse_code_datum:
Data .-,-...,-.-.,-..,.,..-.,--.,....,..,.---,-.-,.-..,--
Data -.,---,.--.,--.-,.-.,...,-,..-,...-,.--,-..-,-.--,--..
'
'
' ----------------------------
Procedure Emit_file
  '
  Cls
  Print
  Print "Morse Code for: ";Filename$
  Print "Press any key to abort function."
  Print
  '
  Let Text_pointer=Textbuffer
  Let Beeping=True
  '
  While Peek(Text_pointer)>0 And Beeping
    '
    Let Letter$=Chr$(Peek(Text_pointer))
    Let Lowercase_test=((Asc(Letter$)>=Asc("a"))*32)-Asc("@")
    Let Character=(Asc(Letter$)+Lowercase_test)
    '
    If Character<0 Or Character>26
      Let Character=False
    Endif
    '
    If Letter$=" " Or Letter$=Chr$(13)
      Print Letter$;
      Pause 10
      If Letter$=Chr$(13)
        Print
      Endif
    Endif
    '
    If Character
      Print Letter$;
      @Emit_character(Character)
      Pause 10
    Endif
    '
    If Inkey$>"" Or Mousek
      Let Beeping=False
    Endif
    '
    Let Text_pointer=(Text_pointer+1)
  Wend
  '
Return
'
' ------------------------------
Procedure Emit_character(Letter)
  '
  Let Number_of_dahs_and_dits=Len(Morse_code$(Letter))
  For I=1 To Number_of_dahs_and_dits
    '
    Let Bit$=Mid$(Morse_code$(Letter),I,1)
    '
    If Bit$=Dash$
      Sound 1,15,1,Octave
      Pause Dash_delay
      Sound 1,0,0,0,0
    Endif
    '
    If Bit$=Dot$
      Sound 1,15,1,Octave
      Pause Dot_delay
      Sound 1,0,0,0,0
    Endif
    '
    Pause 8
  Next I
  '
Return
'
' ------------------------------
Procedure Terminate
  Edit
  End
Return
'
' ------------------------------
Procedure Select_file
  Text 30*Charw,3*Charh," Load Morse File "
  Box (29*Charw),(2*Charh),(51*Charw),4*Charh
  Print At(1,6)
  Print "                    "
  Print " You need to load   "
  Print " a file containing  "
  Print "the morse text file "
  Print "from the disk into  "
  Print "the computer so you "
  Print " may listen to it.  "
  Print "                    "
  Print " Either clickselect "
  Print "  or type in the    "
  Print " filename  of the   "
  Print " file you wish to   "
  Print "       open.        "
  Print "                    "
  Box 0,(6*Charh),(20*Charw),(20*Charh)
  '
  @Prompt_action
  Print Bell$;
  Fileselect Drive$+":\*.*","",Filename$
  '
  If Exist(Filename$)
    Let File_found=True
    '
    Bload Filename$,Textbuffer
  Else
    Let File_found=False
    Print Bell$;
    Alert 0,"File not found!",1,"Rats",Button
  Endif
  '
Return
'
' -------------------------
Procedure Prompt_action
  Let Prompt_offset=61
  '
  Print At(Prompt_offset,16);"                   "
  Print At(Prompt_offset,17);"  Select a file    "
  Print At(Prompt_offset,18);"  and press [ OK ] "
  Print At(Prompt_offset,19);" <-----------      "
  Print At(Prompt_offset,20);"  Or press [Cancel]"
  Print At(Prompt_offset,21);"  to abort action. "
  Print At(Prompt_offset,22);"                   "
  Box (Prompt_offset-1)*Charw,(15*Charh),
     (Prompt_offset+18)*Charw,(22*Charh)
Return
'
```

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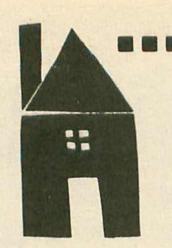
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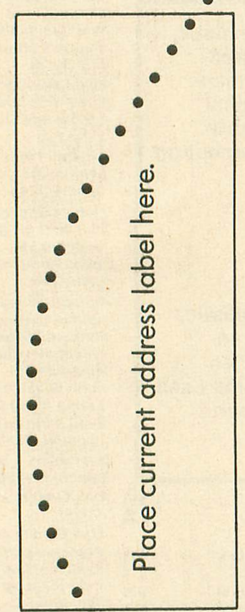
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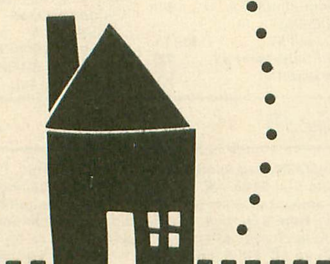
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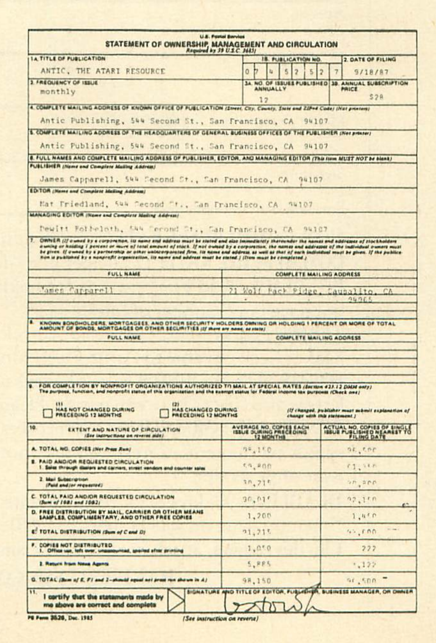
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1B. PUBLICATION NO.: 0 7 4 5 2 5 2 7
2. DATE OF FILING: 9/18/87
3. FREQUENCY OF ISSUE: monthly
3A. NO. OF ISSUES PUBLISHED ANNUALLY: 12
3B. ANNUAL SUBSCRIPTION PRICE: $28
4. COMPLETE MAILING ADDRESS OF KNOWN OFFICE OF PUBLICATION *(Street, City, County, State and ZIP+4 Code) (Not printers)*: Antic Publishing, 544 Second St., San Francisco, CA 94107
5. COMPLETE MAILING ADDRESS OF THE HEADQUARTERS OF GENERAL BUSINESS OFFICES OF THE PUBLISHER *(Not printer)*: Antic Publishing, 544 Second St., San Francisco, CA 94107
6. FULL NAMES AND COMPLETE MAILING ADDRESS OF PUBLISHER, EDITOR, AND MANAGING EDITOR *(This item MUST NOT be blank)*
PUBLISHER *(Name and Complete Mailing Address)*: James Capparell, 544 Second St., San Francisco, CA 94107
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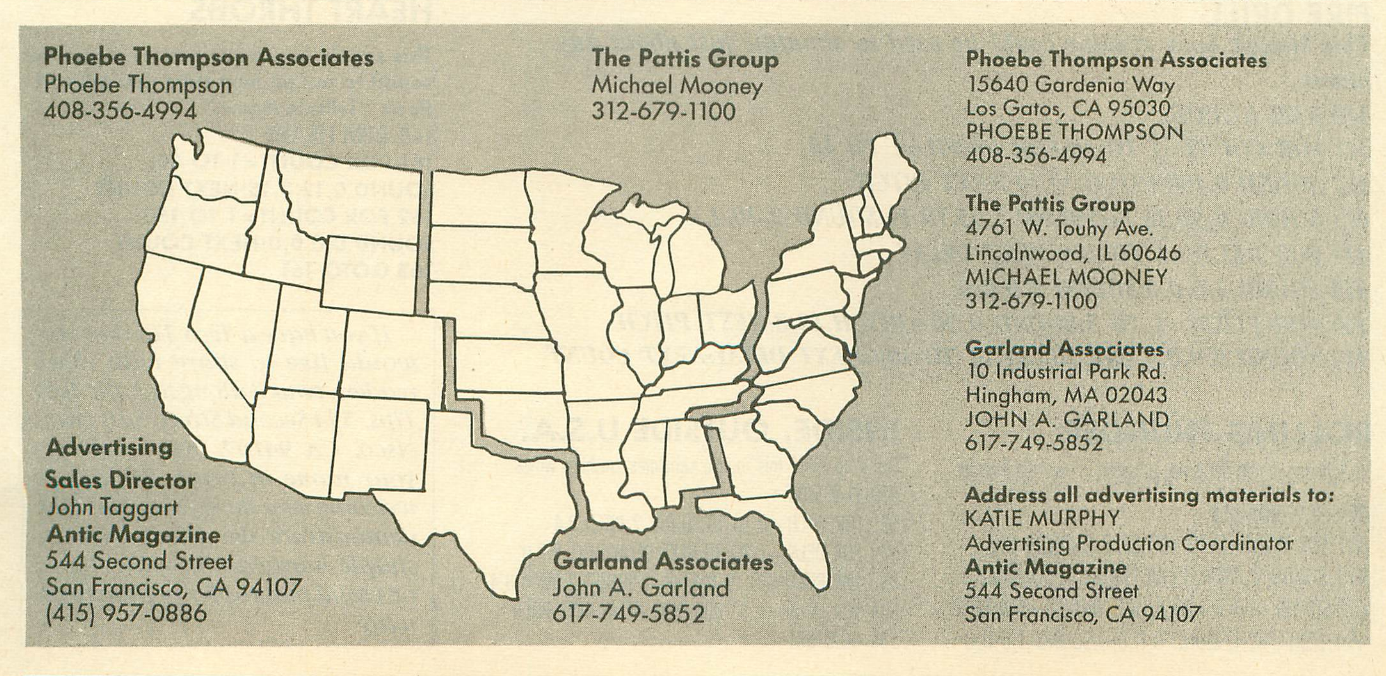
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Advertising Sales



ALIEN INVADERS

Go ahead! RUN this one late at night. Your neighbors might think an alien spacecraft is landing right outside their windows.

```
300 REM SAUCER
301 SOUND 0,0,0,0:REM INIT POKEY
302 VOLUME=8:PITCH=100
303 POKE 53768,4:REM AUDCTL
304 POKE 53761,160+VOLUME:REM AUDC1
305 POKE 53765,160+VOLUME+4:REM AUDC3
306 POKE 53760,PITCH:REM AUDF1
307 POKE 53764,PITCH/2:REM AUDF3
308 GOTO 302
```

This month's Tech Tips is a collection of short, intriguing sound effects routines from the Carl Evans book, *Atari BASIC: Faster and Better.*

ALL ABOARD

This train effect starts out slow and speeds up, taking time out now and again to blow a whistle.

```
250 REM TRAIN
251 REPEAT=0:DELTA=10:FOR TIME=1 TO 90:GOTO 253
252 DELTA=75:FOR TIME=1 TO 50
253 FOR VOLUME=15 TO 4 STEP
    -DELTA/100:SOUND 0,15,0,VOLUME:NEXT VOLUME
254 DELTA=DELTA+1:IF DELTA>75 THEN DELTA=75
255 NEXT TIME:SOUND 0,0,0,0:IF REPEAT>2 THEN 252
256 REPEAT=REPEAT+1:FOR WHISTLE=1 TO 2
257 FOR VOLUME=2 TO 10 STEP 0.5
258 SOUND 1,50,10,VOLUME:SOUND 2,70,10
    ,VOLUME:SOUND 3,90,10,VOLUME:NEXT VOLUME
259 FOR DELAY=1 TO 400:NEXT DELAY:SOUND 0,0,0,0
260 FOR VOLUME=10 TO 1 STEP -2
261 SOUND 1,50,11,VOLUME:SOUND 2,70,11
    ,VOLUME:SOUND 3,90,11,VOLUME:NEXT VOLUME
262 FOR DELAY=1 TO 50:NEXT DELAY
263 SOUND 1,0,0,0:SOUND 2,0,0,0:SOUND
    3,0,0,0:NEXT WHISTLE
264 GOTO 252
```

BOOM

Another excellent sound effect that you might want to include in a game—or to frighten your housemates.

```
320 REM BOMB
321 DURATION=10:VOLUME1=4
322 FOR PITCH=30 TO 75:SOUND 0,PITCH,10,VOLUME1:
SOUND 1,PITCH+3,10,0.7*VOLUME1
323 FOR DELAY=1 TO 3*DURATION:NEXT DELAY
324 VOLUME1=1.03*VOLUME1:NEXT PITCH
325 SOUND 2,35,8,12:VOLUME1=15:VOLUME2=15:VOLUME3=15:
PITCH=DURATION+5:DELTA=0.79+DURATION/100
326 SOUND 0,PITCH,8,VOLUME1:SOUND
 1,PITCH+20,8,VOLUME2:SOUND 2,PITCH+50,8,VOLUME3
327 VOLUME1=DELTA*VOLUME1:VOLUME2=(DELTA+0.05)*VOLUME2:
VOLUME3=(DELTA+0.08)*VOLUME3328 IF VOLUME3>1 THEN 326
329 SOUND 0,0,0,0:SOUND 1,0,0,0:SOUND 2,0,0,0:GOTO 321
```

SPLAT

This excellent sound effect is fit for a Road Runner cartoon—keep your ears open for the next time Wile E. Coyote, super genius, falls from yet another high place.

```
280 REM SPLAT
281 FOR PITCH=30 TO 125 STEP 3
282 SOUND 1,PITCH,10,INT(PITCH/10)
283 FOR DELAY=1 TO INT(PITCH/10):NEXT DELAY:NEXT PITCH
284 SOUND 1,20,0,14:SOUND 2,255,10,15
285 FOR DELAY=1 TO 100:NEXT DELAY
```

FIRE DRILL

This klaxon horn routine could be used to simulate just about any alarm.

```
410 REM KLAXON
411 FOR COUNT=1 TO 10:FOR PITCH=1 TO 10
412 SOUND 0,100-PITCH,10,10:NEXT PITCH
413 SOUND 0,90,10,14:SOUND 1,95,10,14:SOUND 2,20,2,4
414 FOR DELAY=1 TO 200:NEXT DELAY
415 SOUND 1,0,0,0:SOUND 2,0,0,0
416 FOR PITCH=1 TO 5:SOUND 0,90+PITCH,10,8:NEXT PITCH
417 SOUND 0,0,0,0:FOR DELAY=1 TO 100:NEXT DELAY:NEXT COUNT
```

HEART THROBS

This simple heartbeat routine is just the sound to put on next time you re-read Poe's "Telltale Heart."

```
160 REM HEART
161 FOR COUNT=1 TO 40:
SOUND 0,12,3,15:NEXT COUNT
162 FOR COUNT=1 TO 150:
SOUND 0,0,0,0:NEXT COUNT
163 GOTO 161
```

ROLLING THUNDER

No lightning or rain this time, just good ol' no-frills thunder.

```
490 REM THUNDER
491 FOR PITCH=5 TO 100 STEP RND(0)+0.2
492 SOUND 0,PITCH,8,(100*RND(0)+50)/PITCH
493 SOUND 1,PITCH+20,8,(100*RND(0)+50)/PITCH
494 NEXT PITCH:SOUND 0,0,0,0:SOUND 1,0,0,0
```

INSIDE, OUTSIDE U.S.A.

Surf's up—and this routine simulates crashing waves.

```
530 REM SURF
531 FOR PITCH=0 TO 10:SOUND 2,PITCH,8,4
532 FOR DELAY=1 TO 30:NEXT DELAY:NEXT PITCH
533 FOR PITCH=10 TO 0 STEP -1:SOUND 2,PITCH,8,4
534 FOR DELAY=1 TO 300:NEXT DELAY:NEXT PITCH
535 GOTO 531
```

If you have a Tech Tip that you would like to share with other readers, send it along to Antic Tech Tips, 544 Second Street, San Francisco, CA 94107. You might get your name in print. We always welcome very short programs that demonstrate the Atari's powers, simple hardware modifications, or useful macros for popular software.

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Introducing the ST Hard Drive System from ICD that refreshes your memory better than any other ST hard drive around. *No problem.*

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Despite a sleek and compact exterior, the ICD ST Hard Drive System is packed full of overwhelming enhancements. Like an internal clock that tags each file with up-to-the-minute time and date information. Not to mention expansion capabilities that welcome the connection of up to six SCSI devices and daisy-chaining Atari's DMA Bus (ACSI). It's available in more memory capacities than you can imagine. With storage ranging from 20 megabyte systems up to 280 megabytes. And, there's dual drives too, that double your protection and double your confidence. *No stress.*

So, the next time you think about a hard drive for your Atari ST, think about the countless ways we can refresh your memory. It's the only drive worth remembering. Because it's from ICD. *No wonder.*

For further product information, please call or write for our catalog today.

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